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S. HRG. 104–387, PT. 2

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 1996 AND THE FUTURE YEARS DEFENSE PROGRAM

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PT. 2
Department of Defense Authorization...

HEARINGS

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED FOURTH CONGRESS

FIRST SESSION

ON

S. 1026

AUTHORIZING APPROPRIATIONS FOR FISCAL YEAR 1996 FOR MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR MILITARY CONSTRUCTION, AND FOR DEFENSE ACTIVITIES OF THE DEPARTMENT OF ENERGY, TO PRESCRIBE PERSONNEL STRENGTHS FOR SUCH FISCAL YEAR FOR THE ARMED FORCES, AND FOR OTHER PURPOSES

PART 2
SEAPOWER

APRIL 4; MAY 9, 16, 18, 1995

Printed for the use of the Committee on Armed Services

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DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 1996 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, APRIL 4, 1995

U.S. Senate,
Subcommittee on Seapower,
Committee on Armed Services,
Washington, DC.

SURFACE SHIPBUILDING PROGRAMS AND THE DEPARTMENT OF THE NAVY'S PLANS FOR MODERNIZATION AND RECAPITALIZATION

The subcommittee met, pursuant to notice, at 9:29 a.m., in room SR–222, Russell Senate Office Building, Senator William S. Cohen (chairman of the subcommittee) presiding.

Committee members present: Senators Thurmond, Warner, Cohen, McCain, Lott, Kennedy, Robb, and Lieberman.

Committee staff members present: Richard L. Reynard, staff director; George W. Lauffer, deputy staff director; and Christine K. Cimko, press secretary.

Professional staff members present: Romie L. Brownlee, Stephen L. Madey, Jr., and Steven C. Saulnier.

Minority staff members present: Creighton Greene, professional staff member.

Staff assistants present: Pamela L. Farrell, Shelley G. Lauffer, and Jason A. Rossbach.

Committee members' assistants present: Dale F. Gerry, assistant to Senator Cohen; Ann E. Sauer, assistant to Senator McCain; Thomas L. Lankford, assistant to Senator Smith; Patricia L. Stolnacker, assistant to Senator Santorum; Andrew W. Johnson, assistant to Senator Exon; Steven A. Wolfe, assistant to Senator Kennedy; Suzanne M. McKenna and John P. Stevens, assistants to Senator Glenn; William Owens, assistant to Senator Robb; John F. Lilley, assistant to Senator Lieberman; and Penny Pounds, assistant to Senator Lott.

OPENING STATEMENT OF SENATOR WILLIAM S. COHEN, CHAIRMAN

Senator Cohen. The subcommittee will come to order. This morning the Senate Armed Services Subcommittee on Seapower meets to review a number of issues associated with the Department of the Navy's Surface Shipbuilding Programs and the Department's plans for modernization and the recapitalization within the context of fiscal year 1996 budget and the future years' defense programs.

Our witnesses this morning are Hon. Nora Slatkin, the Assistant Secretary of the Navy for Research, Development, and Acquisition; and Vice Adm. Joe Lopez, the Deputy Chief of Naval Operations Resources, Warfare Requirements, and Assessments.

The titles are so comprehensive it is clear that there are very few, if any, areas within the Department of the Navy that our two witnesses do not personally touch the decisionmaking authority in some way. Consequently, they are both in an excellent position to address the thorny modernization and procurement issues that this year's defense budget forces us to confront.

Although current readiness is a central concern of the full committee, I intend to focus our inquiry today on current trends in the Navy's plans for recapitalization and modernization, with specific emphasis on its shipbuilding program.

A quick review of the defense budget is revealing: It has declined continuously over the past 10 years. Investment accounts, procurement, R&D have declined 60 percent. The procurement budget is at its lowest level since before the Korean war. This decline has been both absolute and relative. The relative weightings of the investment and operating accounts have been inverted; procurement has become the bill payer for efforts to prop up current readiness.

These continuously declining defense budgets, particularly in an environment of unexpectedly intense operational demands, have generated conditions that prevent the Navy and the other military departments from adequately planning beyond the budget year. Annual requirements-based budgeting, during a downward budget spiral, has become an exercise in 5-year planning one year at a time as new reactive, short-notice cuts are directed each year. This budget, like the previous two, forces recapitalization further into the outyears, creating a modernization bow wave that may prove insurmountable.

While catch phrases such as "recapitalization" and "rightsizing" convey an optimistic view of the future, the numbers tell quite a different story. In last year's budget, the Department planned to procure 22 ships during the fiscal years 1996 through 1999. This year's budget plans for only 15, a decrease of some 30 percent. Further, the fleet that must be sustained has increased in size as operational demands have outpaced last year's "rightsizing" project projections. Last year the Navy, spoke of a fleet of about 330 ships. This year it has been forced to buy back a number of FFG–7s to meet the intense operational demands of post-Cold War littoral operations.

This year's budget will produce only three ships. It proposes the final increment or payment for the SSN–23 and procures only two other service combatants. Next year's budget will do no better. Simple arithmetic makes it clear that we are not buying enough ships in the foreseeable future to sustain a fleet of about 345 ships, including 11 aircraft carriers.

The subcommittee must evaluate the Navy shipbuilding plan to determine whether it is credible, whether it is prioritized properly relative to the Navy's strategic vision of littoral warfare contained in "From the Sea" and "Forward From the Sea," and whether it is adequate to meet our country's national security needs. Finally, we must determine the resource implications of a credible, properly prioritized and adequate plan, and search for ways to execute it.

Ms. Slatkin and Vice Admiral Lopez, we welcome you. We want to thank you for joining us, and we are looking forward to gaining your insights and working with you to sustain the naval forces of the maritime nation that we have and will need for its national security for the future.

I know that Senator Kennedy is under a time restriction this morning. I am going to yield to him for his opening comments and also he may wish to pose questions to the two witnesses before you make your opening statements, and then you will be able to respond and then we will open up and let Senator McCain and Senator Warner. Senator Warner and Senator McCain may have opening statements, but we will let Senator Kennedy proceed in that fashion.

Senator KENNEDY. Well, I thank the Chair very much and the other members of the committee. At 10 o'clock the Prime Minister of Great Britain is meeting with a group of Senators, and I wanted to have the opportunity to extend the courtesy of being on time for that meeting and also to inquire on some matters of importance, so I thank the Chair and the other members of the committee.

I would like to put my statement in the record, if I could, Mr. Chairman.

Senator COHEN. Certainly.

Senator KENNEDY. What I would like to address, Madam Secretary, is that 3 years ago Congressman Aspen advocated a fleet of 340 ships, and the Navy was not enthusiastic about the proposal and is now planning for a fleet of some 340 ships.

My assessment of the shipbuilding plan you currently project for fiscal year 1994 to 2001 is not adequate to support the 340-ship fleet. The conclusion is that 35 ships which will add to fleet size, if we can expect the average age of 35 to 40 years, is probably optimistic. Your plan supports a fleet of, roughly, 160 ships in the long run.

Each time that I have raised the issue the Navy has given reassurances based on two points: One is that the shipbuilding rates in the 1980s were higher than they would have been required to support the 340-ship fleet. We can live off of this investment for some period. Two, our shipbuilding investment will turn the corner at some unspecified date in the future. However, every shipbuilding plan we have seen in the past several years turns the corner in the wrong direction, and I am skeptical of claims that the Navy is going to be able to turn the corner.

I understand the administration's commitment to protect readiness. However, in the face of a projected shipbuilding plan that supports a fleet of 160 ships, how can you assure us for not protecting the current readiness at the expense of future capability?

Ms. SLATKIN. Senator, if I may. Some of the opening remarks will cover your points, but I believe you and the chairman have hit the critical nail on the head, as far as the issue for the shipbuilding investment accounts for this year and for the future. If I may make three generalized remarks and then ask Admiral Lopez if he would like to add any comments.

As you correctly point out, fiscal year 1996 is a snapshot. It is one year that is part of our overall recapitalization program. Indeed, our recapitalization effort is based not only on the notion of recapitalizing our ships, but based on and predicated on the notion that we within the Navy Department have to generate savings in order to make sure that we can sustain the recapitalization for the shipbuilding industry that we are proposing to you.

Our program is based on three parts: First, is our investment strategy or our recapitalization strategy. Second, is our ability to generate savings within the Navy Department to make sure that we do not repeat the mistakes of the past.

The way we generate savings within the Navy Department is through outsourcing methods; through rightsizing our infrastructure and our force structure to reduce the number of people; through acquisition reform; through changing the way we do business, so we can do more things efficiently; and through our BRAC process.

We had an aggressive BRAC round last time and we have an aggressive round, we believe, this time. Indeed, all of those activities will help to ensure that over the future the Navy program has the assets available to continue to recapitalize our shipbuilding program.

As you pointed out, sir, we are quite fortunate in that the 1980s generated the procurement of a large number of ships—at quite high rates. We have a force whose average age is young right now in terms of our surface fleet, carriers, and combat logistics force.

We have at this point in time been able, given the age of our force, which is quite young, to take a prudent risk and slow down procurement this year in order to put emphasis on readiness and quality of life. But at the end of the day we must insist that we recapitalize our surface fleet and recapitalize our naval forces to meet 346 ships. We have to do that by generating savings within the Navy Department and by seeing planned growth in the procurement accounts toward the end of the fiscal year.

Senator KENNEDY. Well, I thank you for your response, and I will look forward to looking through the testimony. Down the road we will look at situations where you are going to have to be restarting your submarine production.

Ms. SLATKIN. Yes.

Senator KENNEDY. You are going to have the major block obsolescence with the amphibious fleet. You are going to have the replacing of the A–6 aircraft with some product coming out of the Joint Advanced Strike Technology Program. You are going to have the V–22, the replacing of the Marine helicopters and the advanced amphibious assault vehicles, which at least there has been a strong commitment toward moving forward.

If you project the cost of those areas, each of which are major, major undertakings and a look at both flow lines of what we are talking about and that you have referenced to, there seems to be some warning flags that at least have gone up.

I do not know whether you want to make a brief comment on your own thinking about how you have looked at those particular programs, and I am sure you have, in earlier response to the question whether you still believe that we are going to be able to respond to those particular needs, given the strong commitment of the Congress in those areas, be able to afford those?

Ms. SLATKIN. Senator, we do have an aggressive recapitalization plan across the board, as you pointed out. As I said in my earlier comments, there are risks with this plan. There are basically three risks. As I have explained, we have based this plan on the notion that we are going to get savings from rightsizing our force structure, savings from acquisition reform, and savings from BRAC.

First, the risk is that savings do not materialize from BRAC. We are almost there on rightsizing our force structure, so we are generating those savings. The second real challenge and risk to us is that our acquisition costs do not rise. We are very aggressively reforming the way we do business. But if that does not come to pass, then that is another risk. The third risk is that inflation may grow, and we may not be able to afford that if the inflation rates are high. I think we understand our risk. We have put together a plan to be able to recapitalize for the future.

Senator KENNEDY. Well, I think this will be, obviously, a major area of interest to the committee, and we want to work with you.

Thank you, Mr. Chairman.

Just two other areas, quickly: One is on the strategic Sealift contracts. The question about whether we can use the resources in the Sealift Fund budget for other purposes. Can you tell us about where we are? Are there resources there? Are they being used for other purposes? Do you interpret that you can use those resources if they are there for other purposes?

Ms. SLATKIN. I am sorry, Senator, I did not hear you.

Senator KENNEDY. Last year, when we had the hearing there were some questions over the excess funds in the Strategic Sealift Fund budget based on the timing of contract awards.

Your testimony mentions that there has been some slip in the Strategic Sealift Conversion program schedule. The question was, Does this mean the contracts for the new construction ships can be delayed, and we can use the resources of the Sealift Fund for other purposes? If you want to provide that for the record, that is fine with me.

Ms. SLATKIN. I would like to do that, please.

Senator KENNEDY. Okay.

[The information follows:]

To date, there has been no impact or delays in the new construction of Large Medium Speed roll-on/roll-off Sealift ships as a result of construction delays in the conversion of Large Medium Speed roll-on/roll-off ships. Furthermore, of the three shipyards building Large Medium Speed roll-on/roll-offs, only NASSCO builds both new and conversion vessels. NASSCO has six ships under contract, three conversions and three new construction. Currently, all new construction Large Medium Speed roll-on/roll-off ships at both NASSCO and Avondale remain on schedule.

Ms. SLATKIN. To the best of my knowledge, we have had some delays in the conversion program, but new construction has been on track. We need that Sealift money to fund our Sealift ships. It is an important program, as you well know.

Senator KENNEDY. Well, I think that is the answer that I was looking forward to see.

Ms. SLATKIN. Absolutely.

Senator KENNEDY. Finally, on the MPS, on the lease buyout, we were made aware that the military last year, the Sealift Command, was renegotiating the lease contracts. The Navy has signed new contracts. Then we received conflicting information which lead the Secretary of Defense to provide a report on the issue surrounding the issues.

We have not seen the requested report, but we have Navy documentation that indicates the Navy may try to divert some of the strategic sealift fund unobligated balances to buyout the leases. As I read the language in Title X establishing the Sealift Fund, these funds may only be used for the express purposes for which it is approved.

Does the Navy believe that absent further clarifying language, congressional approval of the Sealift Fund budget to buy new sealift ships is tantamount to approval of the Navy's diverting unobligated sealift balances to buy out the MPS leases?

Ms. SLATKIN. As I understand the situation, Senator, we have a proposal to buy out the leases. We have been up trying to brief all the committees' staffs. I believe we need your concurrence to use the Sealift Funds for this purpose. If you need a formal request from us, I will be happy to provide that. I believe we need your concurrence to proceed.

Senator KENNEDY. Fine.

Thank you very much, Mr. Chairman. I appreciate it. Thank you.

[The prepared statement of Senator Kennedy follows:]

PREPARED STATEMENT BY SENATOR EDWARD M. KENNEDY

Thank you, Mr. Chairman. I join in welcoming our witnesses to the hearing this morning.

This is the first meeting of the Seapower Subcommittee in 1995. I look forward to working with you, Mr. Chairman, as we deal with some very important issues this year. We have worked well together in the past, and I look forward to continuing the same cooperative effort.

You have laid out a thorough plan for addressing the major issues facing the subcommittee. Today we consider the Navy's program for surface shipbuilding. The question is how well the Navy's planned surface fleet will be able to meet the threats of the future.

We all understand the importance of maintaining the readiness of our naval forces. Operations, maintenance, and training are important for maintaining ready forces, but so too is modernization and its role in shaping the Navy's future force structure.

Today's investment in modernization helps determine tomorrow's readiness. The fundamental challenge facing the subcommittee is to achieve the proper level of modernization this year and for the years ahead.

One obvious focus of our review is the number and capabilities of the ships the Navy is buying. The witnesses' prepared statement refers to cooperative engagement capability and ship self-defense. Both of these are initiatives that this subcommittee took a major role in bringing to fruition in recent years, and I look forward to hearing more about the Navy's plans for the future.

Thank you again, Mr. Chairman, for calling this important hearing.

Senator COHEN. Thank you, Senator Kennedy. Senator Warner.

Senator WARNER. I will pass.

Senator COHEN. Senator McCain.

Senator MCCAIN. Mr. Chairman, I would like to bring to your attention and that of other members of the committee the problems I have had with Secretary Slatkin in receiving a response to my questions. I wrote a letter on January 9.

Ms. SLATKIN. Yes, sir.

Senator MCCAIN. It was a briefing held following that by one of her assistants who in his briefing said, "We are not ready to discuss details of costs of SSN–222." My letter to her on January 9 was questions about the cost of the *Seawolf.*

As you may know, I know you are aware, Mr. Chairman, we passed a legislation last year requiring cost caps on the *Seawolf* submarine. Then, finally, on March 1, nearly 2 months later, I received a response from Secretary Slatkin saying, "Thank you for your letter. I am pleased to provide the information you requested to keep you advised. To that end Ms. Ann Sauer and staff members were briefed by Deputy Assistant Secretary of the Navy for Ship Programs."

This is his briefing which he was not prepared to talk about costs, which was not then, therefore, a response to my initial letter. Then Ms. Slatkin stated that there would be another briefing concerning cost of the *Seawolf,* and it is my understanding that that briefing had no information concerning the costs of the *Seawolf* Program, which has been plagued, as you know, Mr. Chairman, by significant overruns.

Ms. Slatkin, I know you served for a long time with the Democrats in the House Armed Services Committee for the other side. There has been an election, and we expect responses. I expect a response from you. You have been totally, completely, absolutely unresponsive to a simple, straightforward set of questions. I think it is outrageous, and I think it is unacceptable.

I think any member of this committee should have the right to get an answer to straightforward questions. If these questions were not understandable to you or difficult for you to respond to, then I would have appreciated you giving me questions as to how it could be clarified. You have been totally and completely unresponsive. I think it is outrageous.

I am not sure what I can do about it, but I think there are some things that I can do about it in the future. I want to register, Mr. Chairman, my absolute disgust at the fact that I cannot get straight answers to some very simple questions concerning the cost of a multibillion-dollar program.

I was not seeking anything but cost numbers, and so far I cannot get it. I intend obviously not to let this go without some kind of action on our part and seek that on the part of the committee.

I thank you, Mr. Chairman. I would be glad to hear a response from Secretary Slatkin, if she would like.

Senator COHEN. Secretary Slatkin, would you like to respond to that?

Ms. SLATKIN. Please.

Senator, first, let me start by saying it was never my intent to not fully answer your questions. Indeed, as soon as we received your letter, I dispatched the people that I had available to respond. I thought we had given an adequate initial response.

At the time, sir, as you may recall, we were in the process of changing our Program Executive Officer and our program managers. So at the time, in early January, I requested them to get back to you once they had their feet on the ground, which I had assumed would be early February.

I sincerely apologize for the fact that you have not received the responses to your questions in a timely manner. It has always been the hallmark of my personal involvement with the Congress to be as responsive as possible. Let me say I will take actions to correct that as soon as you are available or your people are available to get a detailed briefing.

Concerning the facts, however, Senator, we have taken aggressive action to ensure that the *Seawolf* meets the legislative cost cap that you and this committee put into law. It is an aggressive undertaking. We have fundamentally changed the way we are doing business on the waterfront at Groton. Changed the way the Navy Department is doing business in order to stay within that cost cap. For that you have our sincere and dedicated support.

On the other hand, I find it intolerable that we have not been able to be more responsive to you, and I will correct that situation. But I must say, Senator, that responsiveness has been a hallmark of my involvement with the Congress—trying to be as responsible as possible.

Senator McCAIN. Well, I thank the Chairman. I will just point out again, I am glad to hear that all of this action has been taken. None of that information has been conveyed to me, and it has been 3 months since I wrote that initial letter. I thank you, Mr. Chairman, and I thank the witness for the response.

Senator COHEN. Thank you, Senator McCain.

Senator Robb, do you have an opening?

Senator ROBB. Thank you, Mr. Chairman. I do not have an opening statement. I am going to try to get back. I may not be able to remain for a round of questioning, and if I am unable to return before the hearing concludes, I would like to submit some questions for the record, if I may.

Senator COHEN. Each member can submit questions for the record.

With that, Secretary Slatkin, would you like to give an opening statement?

STATEMENT OF HON. NORA SLATKIN, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT AND ACQUISITION

Ms. SLATKIN. Mr. Chairman, thank you, and the members of the subcommittee for the opportunity to appear here to discuss our fiscal year 1996 Shipbuilding program. I am pleased to have Vice Adm. Joe Lopez accompany me. If I may, sir, I know your time is short, we have a brief presentation. With your permission, I would like to submit my prepared statement for the record.

Senator COHEN. It will be included in full.

Ms. SLATKIN. Thank you. First, let me report to the members of the subcommittee that the three R's that underscore the overall Navy program are serving this Nation well. The three R's are: Readiness, Rightsizing, and Recapitalization.

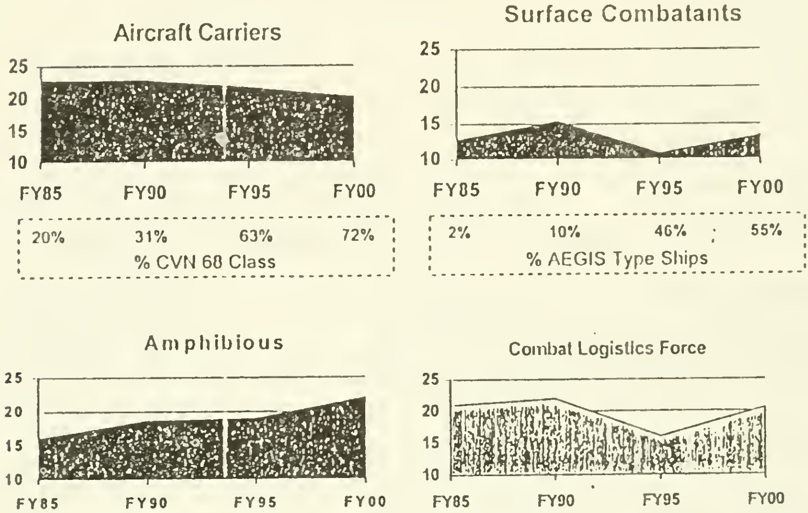
From our vantage point, recapitalization represents a prudent strategy. We must see, however, that it stays on track. Beginning in fiscal year 1996, our recapitalization focus must shift to support our long-term weapon systems modernization program. We plan for procurement accounts to increase to support long-term modernization. We are laying the groundwork for that modernization, and that brings us to our topic here today, our surface ship force.

I am not going to make many remarks about submarines in my statement, because we have a hearing, I understand, planned for

May. But I will be happy to respond to any questions you all have in our shipbuilding account.

I would like to briefly discuss with you, how the age of our surface fleet impacts our current recapitalization goals, our key shipbuilding programs; and our shipbuilding industrial base.

Average Ship Class Age in Years



Recapitalization is simply investing today in the ships and equipment we need to provide for our future defense. It includes both upgrades to existing weapon systems and procurement of new systems. Our investment strategy to recapitalize reflects the fact that we are reducing our forces to suit the current threat as we downsize to a smaller but technologically advanced force.

We are pursuing this strategy to conserve scarce procurement dollars without compromising the quality or the capability of our warfighting forces.

Our near-term surface ship recapitalization effort represents a prudent approach for two reasons. As I discussed earlier with Senator Kennedy, the robust procurement rates of the 1980s are still delivering today new and very capable systems. Force level reductions following the end of the Cold War are allowing us to retire older and less capable platforms. The result is a younger and much more capable surface ship fleet than we have had in recent years.

You can see that on this chart. Having a younger and more capable fleet allows us to take some prudent short-term risks in our shipbuilding investment accounts and fund other important areas in the Navy Department.

I want to point out to you that for fiscal year 1995 in almost all of these categories that our average age in terms of years is at a very good point, at an all time low in almost every category other than amphibious ships.

You can also see under surface combatants and aircraft carriers not only are they at a low point in terms of age, but you can see the percentage of ships that are modern. They are not only younger, they are also improving in terms of their modernization.

Navy Shipbuilding Plan

	FY96	FY97	FY98	FY99	FY00	FY01	TOTAL
NEW CONSTRUCTION							
CVN (Carrier Replacement)	-	-	-	-	AP	AP	-
NSSN (New Attack Sub)	-	-	1	-	1	-	2
SSN-21 (SEAWOLF Attack Sub)	1	-	-	-	-	-	1
DDG51 (Aegis Destroyer)	2	3	2	3	3	3	16
LHD1 (Amphibious Assault)	-	-	-	-	-	1	1
LPD 17 (Amphibious Transport Dock)	-	-	1	-	2	2	5
TAGOS (Ocean Surveillance)	-	-	-	1	-	-	1
TAGS/AGOR (Oceanographic)	-	-	-	1	-	-	1
ADCX (Dry Cargo)	-	-	-	-	1	-	1
Subtotal New Ships	3	3	4	5	7	6	28
CONVERSIONS/RCOH							
CVN Refuelings	AP	AP	1	-	-	-	1
AOE SLEP (Fast Combat Support)	-	-	-	1	-	-	1
TAE CONV (Ammunition Supply)	2	4	2	-	-	-	8
TAFS CONV (Fast Supply)	2	-	-	-	-	-	2
Total SCN	7	7	7	6	7	6	40

These choices that we need to make are reflected in our fiscal year 1996 budget request.

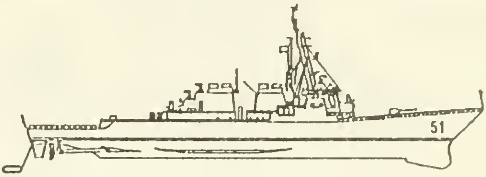
We have already discussed our shipbuilding plan. We are only buying two new surface ships this year because we have made the determination that we are able to tradeoff one ship, a DDG–51, and the start of the LPD–17 in order to fund readiness, military pay, and improve the quality of life of our sailors and our marines.

However, we must start procuring surface ships in greater numbers through the end of this decade to support our long-term surface ship recapitalization goals. There is no doubt about that, we must start to procure a larger number of ships. Our challenge, as we discussed in the question period, is to execute this plan within affordability constraints of a fiscally responsible budget. Changing our processes through acquisition reform is key to implementing this plan.

We must reduce the cost of doing business, and we are doing that by changing our processes. The continued procurement of DDG–51 Aegis Destroyers and the procurement of LPD–17 Class Amphibious Transport dock ships are the building blocks of our plan and allow us to continue to execute our “Forward . . . From the Sea” strategy.

We expect, as I mentioned earlier, the resources for this plan to come from cost savings that are associated with acquisition reform efforts, execution of infrastructure reductions, and outyear budget growth. The combination of all three things.

DDG 51 Program



- Five ships delivered to Fleet this year
  - Each within cost & on schedule
  - Superb Fleet performance
- Flight IIA design 40% complete
- Acquisition strategy study in progress

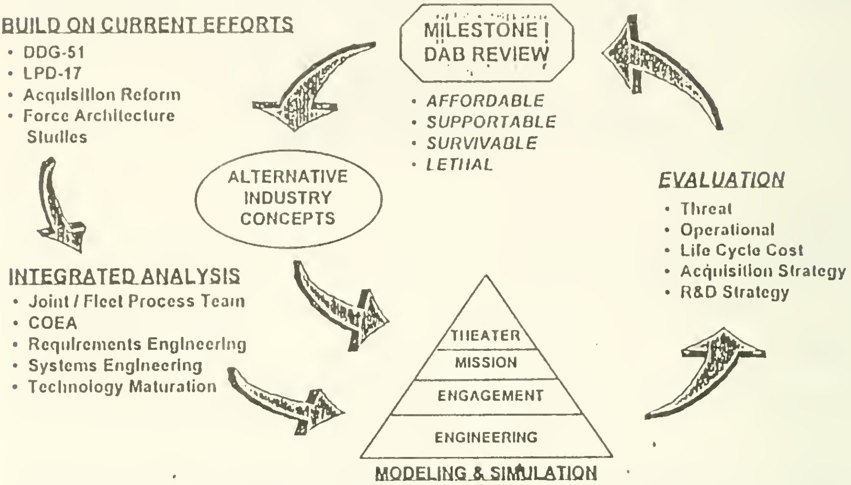
The foundation, as many of you know, or the mainstay of our surface combatant recapitalization program is our DDG–51 Aegis program. The DDG–51 program will deliver five ships to the fleet this year. Each is within cost and on schedule. Both shipbuilders continue to deliver high-quality ships that are performing superbly in our fleet.

The DDG–51 program continues to evolve with the development of the Flight IIA upgrade, which enhances combat capability. The detail design for these ships is about 40 percent complete and is on schedule and within budget. We are very pleased with the way this is progressing.

We are currently, as you know, Mr. Chairman, studying the long-term acquisition strategy for the DDG–51 program to determine the best course of action with regard to surface shipbuilding. We expect this study to concluded this summer.

Last year for the DDG–51 program, as you know, we decided to end the competition that had occurred between the two shipyards and to allocate the six ships that were available between the two yards. In that case, we allocated six ships, three to each shipyard, in order to make sure that we were not encouraging buy-ins and that we were sustaining our shipbuilding base as best we could.

21st Century Surface Combatant → SC-21



BUILD ON CURRENT EFFORTS
- DDG-51
- LPD-17
- Acquisition Reform
- Force Architecture Studies

MILESTONE I
DAB REVIEW

- *AFFORDABLE*
- *SUPPORTABLE*
- *SURVIVABLE*
- *LETHAL*

ALTERNATIVE INDUSTRY CONCEPTS

EVALUATION
- Threat
- Operational
- Life Cycle Cost
- Acquisition Strategy
- R&D Strategy

INTEGRATED ANALYSIS
- Joint / Fleet Process Team
- COEA
- Requirements Engineering
- Systems Engineering
- Technology Maturation

THEATER
MISSION
ENGAGEMENT
ENGINEERING

MODELING & SIMULATION

GOAL: Revolutionary 21st Century Surface Combatant

The capstone and most critical element of our long-term modernization program for surface ships is our 21st Century Surface Combatant which we call SC–21. This is the long-term follow-on to the DDGs. It is the next generation combatant ship or "family of ships." It will be designed to meet both open ocean and expeditionary warfare requirements.

We have just started conceptual studies for this program and will look at a broad range of alternative designs using industry involvement, including the possibility of a "family of ships." Rather than just a one-for-one replacement of Aegis ships, we are looking at concept of a "family of ships," maybe some low end and maybe some high end ships, depending on the mission requirement. We will be happy to talk about that in the question and answer period.

SC–21 will represent a real opportunity for us to implement acquisition reform efforts. It is a lot easier to start initiatives on a brand new program. But, I must say that for DDGs we are making much progress with our existing program in bringing acquisition reform to bear.

Aircraft Carrier and Combat Logistics Force Ship Programs

Aircraft Carrier Program

- CVN New Construction Program continues on track
- CVN Refueling Program to start in FY 1998

Combat Logistics Force Program

- AOE 6 Class still under construction
- AE and AFS Conversions to civilian manning
- ADC(X) - The long-term solution

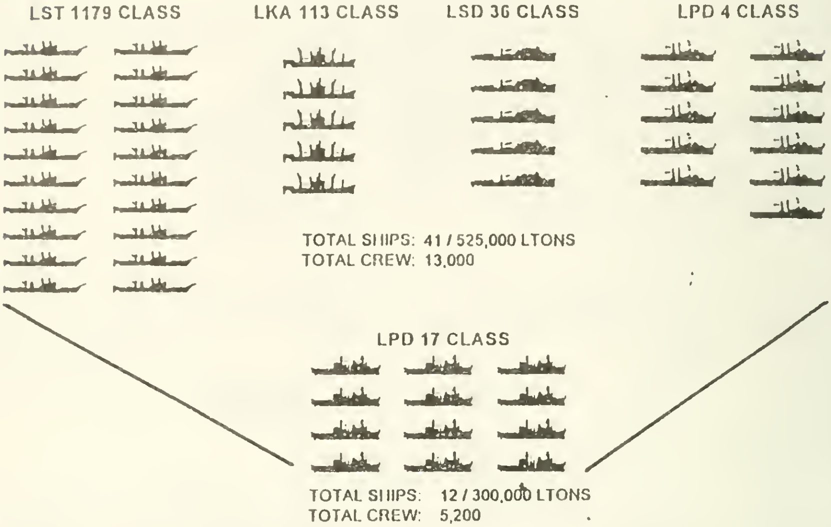
Other important programs in our plan are the aircraft carrier replacement program and the combat logistics force modernization program.

The carrier replacement program continues on track with CVN–74 scheduled for delivery later this year. CVN–75 is continuing construction and the contract award of CVN–76 that we made last fall. We are also requesting $222 million in advance procurement for the refueling overhaul of the U.S.S. *Nimitz,* which we have scheduled to start in fiscal year 1998. This overhaul will start our CVN refueling overhaul program, which will continue past this next decade.

I want to say that on the carrier refueling program we are using an acquisition strategy of allocating nuclear carriers construction and carrier refuelings to Newport News. We have determined while there are other places in the country to do the overhaul, that it is best for our long-term industrial base strategy to allocate this work to Newport News. This is an important part of our two nuclear shipyard concept.

The continued conversion of our ammunition and stores ships to civilian manning are key in the modernization of our combat logistics forces. They are the most cost-effective way to maintain our shuttle ships until the long-term solution, the procurement of what we call ADC(X), and that we have scheduled to begin in fiscal year 2000.

Why LPD 17 ?



LST 1179 CLASS

LKA 113 CLASS

LSD 36 CLASS

LPD 4 CLASS

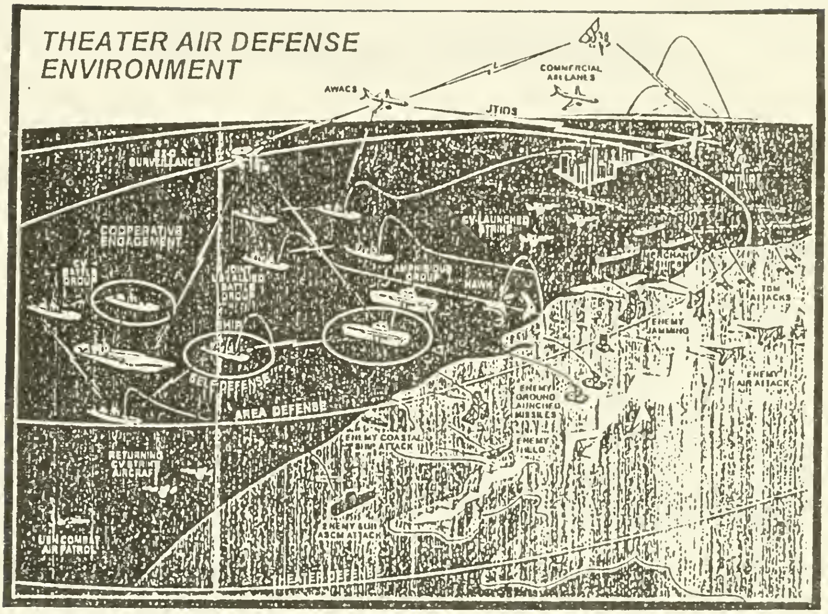
TOTAL SHIPS: 41 / 525,000 LTONS
TOTAL CREW: 13,000

LPD 17 CLASS

TOTAL SHIPS: 12 / 300,000 LTONS
TOTAL CREW: 5,200

The next major area in terms of our modernization program is our LPD–17 amphibious transport dock ship program. This program is the most important element in fulfilling our long-term amphibious goals because, as you can see on this slide, it takes 12 LPD–17 class ships to replace 41 aging and obsolete amphibious ships without sacrificing any required lift capability.

This is a really good deal from our perspective. It is a modernization effort that needs to get underway. We have it scheduled to start in fiscal year 1998. This class of ship provides us real leverage, because we are allowing one ship to replace three. It will significantly reduce our long-term operating costs as well.



I know this is a hearing about surface shipbuilding, but I do not want to forget about the fact that we need to connect all of these platforms together and make a battle force out of them. So I wanted you to know, and I know this is a busy slide, but I wanted you to know that we are moving out very briefly in implementing the will of Congress with regard to Cooperative Engagement capability and Ship Self-Defense.

What you see in this pictorial—and many of you may know about the demonstration we had on the U.S.S. *Eisenhower,* off Puerto Rico, last year—is our ability to net our air assets and all of our surface ships together, so that a ship does not necessarily have to see an incoming missile in order to fire on it.

It is a remarkable capability, a very key one to our long-term efforts. Indeed, it is one where the Congress has been pushing us, this committee in particular, to accelerate the effort. We have received the message, and we are accelerating this program. We had an excellent demonstration off Puerto Rico, and we were very pleased with the way it was executed. These developments are all part of a carefully constructed program to realize our goal of equipping a smaller but more technologically advanced Naval force with the best weapons available.

Sealift Ship Program

- **Continuation of the program vital to meeting Roll-on/Roll-off requirements of the Mobility Requirements Study.**
- **Total of 19 ships required**
  - **14 New construction - Exercise options for two ships in FY 1996**
  - **5 Conversions (already awarded)**
- **Program has had a positive impact on the shipbuilding industrial base**

I want to turn to the Sealift Program, if I may, sir. We believe it is a vitally important part of our surface shipbuilding program. The continuation of our Sealift Ship Program is vital to meeting the Department's requirements to add an additional 5 million square feet of roll-on/roll-off capacity to support two Major Regional Contingencies.

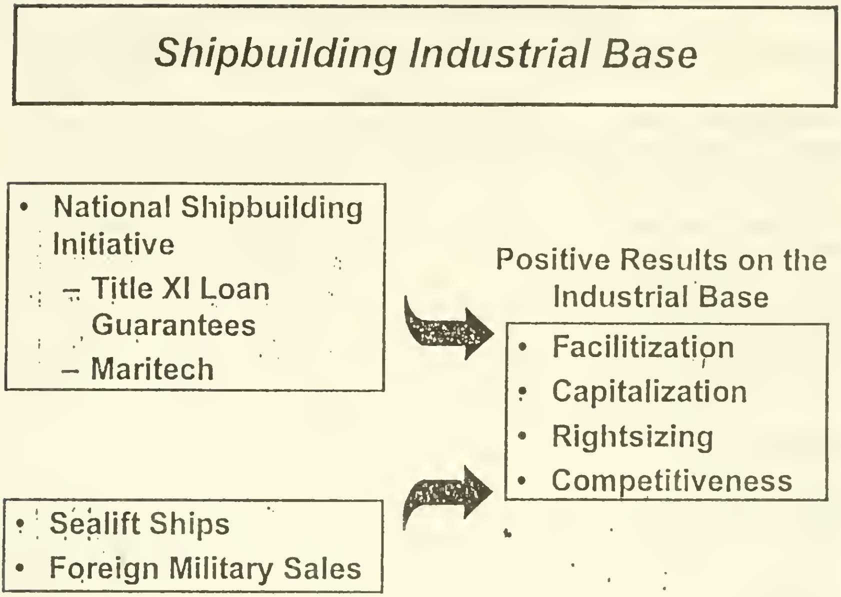
This program has also had a positive impact on the shipbuilding industrial base. We have contracts for five conversion ships. I pointed out that we were behind on the first conversion ships in both yards, but we have contracts for five conversion ships.

Six of the 12 new construction ships under contract have been awarded. They have helped to stabilize the workload at the shipyards involved by providing them the opportunity to build ships that are similar to commercial vessels. The Sealift Program is on track and is moving ahead very well.

Senator COHEN. My understanding was there was some 11-month delay on that. Am I wrong on that?

Ms. SLATKIN. On the conversion ships, the first one at Newport News and the first one at NASSCO are each 11 months behind schedule. Our new construction effort is not yet impacted; we are in good shape.

Senator COHEN. I will come to that later.



Shipbuilding Industrial Base

- National Shipbuilding Initiative
  - Title XI Loan Guarantees
  - Maritech

- Sealift Ships
- Foreign Military Sales

Positive Results on the Industrial Base

- Facilitization
- Capitalization
- Rightsizing
- Competitiveness

Ms. SLATKIN. Surely. Finally, just a word on the shipbuilding industrial base, that I know is of great concern to all of you. We have been fortunate over the past few years because we have had enough capability and capacity to build our ships. It is also clear, however, that our Navy shipbuilding plan cannot continue supporting the entire industry, as it is presently structured.

Several other things have recently happened that have helped our shipbuilders' ability to compete in the global commercial shipbuilding market. In addition to the programs I have described, such as Sealift ships and our help in foreign military sales through the Commerce Department and through our Department, the National Shipbuilding Initiative has really assisted in revitalizing commercial industry and provided a jump-start for the industry.

Mr. Chairman, we have discussed Title XI loans. You know they have provided, through your efforts, the necessary capital for the shipyards to modernize their facilities and have attracted ship operators to build their commercial ships in this country. We have initiated a MARITECH Program in the Department of Defense, a cost-sharing program on maritime technology, that helps facilitate the sharing of technology and should enhance producibility of ships.

Navy Shipbuilding Plan

	FY96	FY97	FY98	FY99	FY00	FY01	TOTAL
NEW CONSTRUCTION							
CVN (Carrier Replacement)	-	-	-	-	AP	AP	-
NSSN (New Attack Sub)	-	-	1	-	1	-	2
SSN-21 (SEAWOLF Attack Sub)	1	-	-	-	-	-	1
DDG51 (Aegis Destroyer)	2	3	2	3	3	3	16
LHD1 (Amphibious Assault)	-	-	-	-	-	1	1
LPD 17 (Amphibious Transport Dock)	-	-	1	-	2	2	5
TAGOS (Ocean Surveillance)	-	-	-	1	-	-	1
TAGS/AGOR (Oceanographic)	-	-	-	1	-	-	1
ADCX (Dry Cargo)	-	-	-	-	1	-	1
Subtotal New Ships	3	3	4	5	7	6	28
CONVERSIONS/RCOH							
CVN Refuelings	AP	AP	1	-	-	-	1
AOE SLEP(Fast Combat Support)	-	-	-	1	-	-	1
TAE CONV(Ammunition Supply)	2	4	2	-	-	-	8
TAFS CONV(Fast Supply)	2	-	-	-	-	-	2
Total SCN	7	7	7	6	7	6	40
TAKR (Sealift New Construction)	2	2	2	2	-	-	8

In summary, we believe that the Department's surface shipbuilding program is a prudent program. We are doing the right thing, and we are building the right mix of ships to support our force level requirements for the future. We are doing that within the constraints of affordability. We believe our budget request supports a rightsized, recapitalized and ready Navy and Marine Corps team. We appreciate the support of the committee and stand ready to answer any questions that you may have.

Senator COHEN. Thank you very much, Secretary Slatkin.

Ms. SLATKIN. Thank you, Mr. Chairman.

Senator COHEN. Admiral Lopez.

STATEMENT OF VICE ADM. T. JOSEPH LOPEZ, USN DEPUTY CHIEF OF NAVAL OPERATIONS RESOURCES, WARFARE REQUIREMENTS AND ASSESSMENTS

Admiral LOPEZ. Mr. Chairman, my remarks are very brief. I certainly concur with what Ms. Slatkin has said on the need for robust modernization of our forces. If we do not realize our savings in the outyears, as she has articulated, then there will be difficulty meeting our needs, but we have every expectation that our BRAC savings, our maintenance savings, and outsourcing savings will be there so that we can, in fact, recapitalize our force.

I further believe that by taking advantage of our Nation's technological edge, our shipbuilding expertise and, frankly, by manning our ships with the best sailors in the world, we can stay forward engaged, be ready to react to crisis or transition to war, if necessary.

I thank you, sir, for allowing me to speak. I am ready to take your questions.

[The prepared joint statement of Secretary Slatkin and Admiral Lopez follow:]

PREPARED JOINT STATEMENT BY HON. NORA SLATKIN, ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT AND ACQUISITION) AND VICE ADM. T. JOSEPH LOPEZ, USN, DEPUTY CHIEF OF NAVAL OPERATION (RESOURCES, WARFARE REQUIREMENTS AND ASSESSMENTS)

Mr. Chairman, distinguished members of subcommittee, thank you for this opportunity to appear before you to discuss the Department of the Navy's shipbuilding program and fiscal year 1996 budget request.

The events of the past year have clearly demonstrated two things. First, we live in an uncertain world that requires our naval forces to meet a wide range of contingencies. Second, the Department's plan for our forces—rightsized, recapitalized, and ready—has served the Nation well. Our Navy-Marine Corps team has performed superbly in a wide variety of missions. And most importantly—we have accomplished these missions without compromising our traditional and unmatched capability to project power and maintain forward presence. Rightsized, recapitalized, and ready—these are the three R's that underpin the Department's budget request for fiscal year 1996.

The greatest challenge for the Department is to strike the right balance between meeting today's needs and those of the future. In 1994, we continued execution of the first element of the three R's—rightsizing. Rightsizing includes shaping and sizing both infrastructure and force structure to meet the requirements of the post-Cold War world. We're almost there. To win two nearly simultaneous Major Regional Conflicts and maintain forward presence we need a force of 346 ships and a force of 174,000 marines. To free the resources to support this rightsized force, we are reducing unneeded infrastructure and streamlining our laboratories, warfare centers, and depots.

In 1994, much attention focused on maintaining the second element, readiness. Through a process of continuous evaluation and adjustment of our programs, we have successfully balanced the needs of today with programs designed for the future. We have paid close attention to our most vital asset—the magnificent sailors and marines that have served our Nation so well. In fiscal year 1996 the Department will continue to closely monitor readiness and make adjustments to our programs as needed.

Recapitalization simply means investing today in the ships and equipment we need to provide for our future defense. It includes both upgrades to existing weapon systems and procurement of new systems. Our investment strategy to recapitalize reflects the fact that we are reducing our forces commensurate with the current threat as we downsize to a smaller but technologically advanced force. We are pursuing this strategy to maximize the use of scarce procurement dollars without compromising the quality and capability of our warfighting force.

Our near-term recapitalization effort represents prudent risks for two reasons. First, the robust procurement rates of the 1980s are still delivering new and very capable systems today. Second, force level reductions following the end of the Cold War are allowing us to retire older and less capable ships. For example, the average age of our surface combatant force in fiscal year 1990 was approximately 15 years with only 10 percent of the ships Aegis capable. Today, the average age of our surface combatant force is approximately 11 years and 46 percent of the ships are Aegis capable. Having a younger and more capable surface fleet allows us to make some prudent short term reductions in our shipbuilding investment accounts and fund other important areas in the Navy.

Beginning in fiscal year 1997, we plan to increase the procurement accounts to support long-term recapitalization. Resources for recapitalization will come from three areas: first, cost savings from acquisition reform, second, execution of infrastructure reduction decisions, and third, outyear real budget growth.

Our fiscal year 1996 budget request represents the turning point of a carefully constructed surface ship recapitalization plan. We remain confident that our modernization investments are on track to meet the force requirements of the 21st Century with platforms and weapons systems that are relevant, affordable, and technologically superior.

OUR MODERNIZATION STRATEGY

We must carefully design programs that will remain relevant for the future. Recapitalization of our surface forces will not require a one-for-one platform replacement. Rather, we are investing in shipbuilding programs that will produce multimission platforms—true force multipliers capable of meeting a wide variety of mission requirements.

We also recognize the need to change the way the Department does business by reducing costs and making the acquisition process more responsive to rapidly changing technology. Our acquisition reform initiatives support modernization programs by addressing three key areas: advanced technology insertion, cost reduction, and avoiding platform obsolescence.

Advanced Technology Insertion

In several critical areas, technological advances in the commercial sector are outpacing the defense sector. This is particularly true with computers and communications. The Department's response is centered on inserting commercially developed advanced technologies into our acquisition programs early on. The Cooperative Engagement Capability program is a good example. We are using advanced technology—over 60 percent of it is commercial off-the-shelf and non-developmental items—to integrate the capabilities of several different ship's sensors. The program will yield a critical capability in earlier missile detection and interception.

Cost Reduction

The overarching need is for affordability in all of our programs. This includes reducing the cost of both production and ownership. To reduce costs, we are incorporating the best commercial practices in the acquisition process, using commercial off-the-shelf and non-developmental items wherever possible, reducing the use of military specifications and standards, and making extensive use of modeling and simulation. These measures are an integral part of all of our new programs where we are using government/contractor integrated product teams to ensure that producibility is considered throughout the acquisition process. Life cycle cost reduction also plays an integral role in making the cost of ownership more affordable.

Avoiding Platform Obsolescence

Today's platforms represent a significant investment of the taxpayer's money. They have a long service life, which means that we need to find ways to avoid platform obsolescence in a rapidly changing world. We are addressing this concern by designing new platforms with an eye toward performance upgrade potential. We are also updating existing platforms with weapon systems that will allow for future growth and capability enhancement. To this end, we are planning to make extensive use of open system architecture, commercial standards, and fiber optics in new programs.

THE DEPARTMENT OF THE NAVY SHIPBUILDING PLAN

Naval presence is accomplished by a wide range of forward-deployed Navy and Marine Corps units operating both at sea and ashore in friendly nations. However, our basic forward presence "building blocks" remain Aircraft Carrier Battle Groups (CVBGs)—with their versatile, multi-mission, naval tactical airwings—and Amphibious Ready Groups (ARGs) with embarked Marine Expeditionary Units. These highly flexible naval formations are valued by the theater commanders precisely because they provide the warfighting capabilities they need to operate forward. Our naval forces are on watch around the globe every day of the year—ready and positioned to respond to a wide range of contingencies.

Supporting the Aircraft Carrier Battle Groups and Amphibious Ready Groups are the Combat Logistics Force ships. These units are supply ships providing the oil, food, and ammunition required to keep the aircraft carrier battle groups and the Amphibious Ready Groups forward for extended periods of time. It is these ships that enable our naval forces to execute the forward portion of the *Forward . . . From the Sea* strategy.

We are also enhancing naval capabilities in the littoral, both in an enabling role and in support of forces ashore. In addition, we are examining the role of forward deployed surface warships in extending conventional deterrence. Forward deployed surface warships, including Aegis cruisers and destroyers with theater ballistic missile defense capabilities, will play an increasingly important role by extending credible defenses to friendly and allied nations.

The Department of the Navy's shipbuilding and conversion plan supports the *Forward . . . From the Sea* strategy. The DDG 51 building program is the cornerstone of our efforts to recapitalize the surface combatant force, provide warfighting upgrades that will yield greater tactical capability, and facilitate advanced Battle Force Tactical Training.

Amphibious forces are integral to littoral operations. The Navy's shipbuilding and conversion plan includes the introduction of a new class of amphibious transport dock ships (LPD–17) in fiscal year 1998, a new class of auxiliary dry cargo ships (ADC(X)) in fiscal year 2000, and another modern amphibious assault ship (LHD–7) in fiscal year 2001. These programs fully support the Department's recapitalization efforts. Table (1) displays the 6-year shipbuilding plan for fiscal year 1996 through fiscal year 2001.

Table 1.—FISCAL YEAR 1996 NAVY SHIPBUILDING PLAN

[SCN appropriation only]

	Fiscal year						Total
	1996	1997	1998	1999	2000	2001	
New construction:							
Carrier replacement (CVN)	....	....	....	....	AP	AP	....
NSSN	AP	....	1	....	1	....	2
SSN 21	1	....	....	....	....	....	1
DDG 51	2	3	2	3	3	3	16
LHD 1	....	....	....	....	....	1	1
LPD 17	....	....	1	....	2	2	5
TAGOS	....	....	....	1	....	....	1
TAGS/AGOR	....	....	....	1	....	....	1
ADC(X)	....	....	....	....	1	....	1
Subtotal new ships	3	3	4	5	7	6	28
Conversion/SLEP/RCOH:							
CVN refuelings (RCOH)	AP	AP	1	....	....	....	1
AOE SLEP	....	....	....	1	....	....	1
TAE conversion	2	4	2	....	....	....	8
TAFS conversion	2	....	....	....	....	....	2
Total conversion/SLEP/RCOH	4	4	3	1	....	....	12
Total SCN	7	7	7	6	7	6	40

DDG 51 Program

The foundation of our surface combatant shipbuilding program is the DDG 51 Aegis Destroyer Program. Many of the different tools, technologies and program control initiatives that will be applied to future shipbuilding programs will evolve from this extremely successful program. To date, the DDG 51 Program is doing very well with regard to cost, schedule, and Fleet performance goals. Five ships will be delivered to the Fleet this year—each within cost goals and on schedule. Both shipbuilders are delivering high quality ships that are performing superbly in the Fleet.

Another significant event for this program was the successful completion of the shock trial for U.S.S. *John Paul Jones* (DDG 53) this past summer. This extremely successful trial validated the survivability of the DDG 51 design.

The DDG 51 Program continues to evolve with the development of the Flight IIA upgrade which enhances the combat capability of these fine ships. The detailed design for these ships is about 40 percent complete and is on schedule. The Flight IIA upgrade represents the first complex combatant detail design done using three dimensional computer aided design.

Last year we decided to allocate six ships from fiscal year 1994 and fiscal year 1995 between the two shipbuilders. We are currently studying our acquisition strategy for the DDG 51 program to determine the best course of action to ensure we maintain an adequate shipbuilding capability while controlling the cost of the remaining ships of this class.

Our fiscal year 1996 budget request contains $2,169.3 million for two DDG 51 class ships. Over the next 5 years, we plan to buy 2.7 ships per year. Our younger and more capable surface combatant force allows us to take this prudent course of action.

21st Century Surface Combatant

The capstone and most critical element of our long term surface combatant ship modernization program is the 21st Century Surface Combatant (SC21). SC21 will follow the DDG 51 as the next generation combatant ship and will be designed to meet both open ocean and expeditionary warfare requirements.

We have just started conceptual studies and will look at a broad range of alternative design concepts provided by industry, including the possibility of a family of ships. This program will build on the current acquisition reform efforts and technology advancements of the DDG 51 and LPD 17 programs and will make extensive use of modeling and simulation to reduce cost while optimizing the final design. Our fiscal year 1996 budget request for this program is $6.7 million of research and development funds.

Aircraft Carrier Program

Because aircraft carrier battlegroups are critical to the implementation of our *Forvard . . . From the Sea* strategy, the continuation of the aircraft carrier replacement program is an important element of our surface ship recapitalization program. The new construction portion of the program is on track with the *John C. Stennis* (CVN 74) scheduled for delivery later this year, and the *Harry S. Truman* (CVN 75) under construction. We also awarded the contract for the *Ronald Reagan* (CVN 76), our ninth *Nimitz* Class carrier in December 1995.

Our fiscal year 1996 budget request for this program is $222 million in Advance Procurement for the Refueling Overhaul of the U.S.S. *Nimitz (CVN 68). This Refueling Overhaul is scheduled for fiscal year 1998 and signals the start of our CVN refueling program which will continue well past the next decade.*

Combat Logistics Force

Our Combat Logistics Force modernization plan consists of three major elements: AOE 6 class ships that are currently under construction; continued conversion of ammunition and stores ships to civilian manning; and the procurement of the ADC(X) beginning in fiscal year 2000.

The AOE 6 class program has delivered two ships to date and is expected to deliver a third ship this summer and a fourth in fiscal year 1998. Later in this decade we plan to begin a service life extension program for the four AOE 1 class ships. Our long range plan also calls for contracting for a ninth AOE ship at the beginning of the next decade.

Conversion of our stores ships (AFSs) and ammunition ships (AEs) continue to be the key element of our Combat Logistics Force modernization plan. Our fiscal year 1996 budget request includes $30.3 million for two ammunition ship (AE) conversions and $22.7 million of two stores ship (AFS) conversions. We have determined that these conversions are the most cost effective way of modernizing our Combat Logistics Forces until we can procure the long-term solution—the ADC(X) dry cargo shuttle ship beginning in fiscal year 2000.

LPD 17 Program

The next planned major surface ship modernization program is the LPD 17 Amphibious Transport Dock ship program. We presently plan to start procurement in fiscal year 1998. This program is the most important element for fulfilling our long-term amphibious lift goals. The 12 ships of the LPD 17 Class will replace 41 aging and obsolete amphibious ships. The LPD 17 Class will also be more survivable than the ships it replaces and will have the ability to support operational maneuvers from the sea and launch from "Over-the-Horizon" against objectives in the littoral.

The LPD 17 class provides real leverage by replacing three ships with one. In addition, we will reap the benefits of reducing our long-term life cycle costs. The LPD 17 program is also utilizing an Integrated Process and Product Development team approach, is applying advanced technologies and the economies of scale to design this next class of highly adaptable amphibious ships.

Extensive modeling and simulation efforts have been utilized to reduce the radar cross section of the LPD 17 design. The biggest accomplishment of the LPO 17 program date is in the reduction of onerous military specifications and standards. The LPD 17 program is leading the way for all of the Navy as a model acquisition program, and is pushing the state of the art in applying simulation based engineering to ships.

Surface Ship Combat Systems – Force Multipliers

Our ships are more than just platforms. They are highly capable combat systems that can bring a tremendous amount of firepower to bear upon our enemies. Our ships operate in an extremely complex and dangerous environment.

We are starting to implement Cooperative Engagement capability, which is a "force multiplier" designed to link Battle Group anti-air warfare units and airborne early warning aircraft into a force-wide combat system. The Quick Reaction Combat Capability and Ship Self Defense System will provide integration and automation capability for our amphibious and other non-Aegis ships, and is projected to reduce reaction time to one fifth that of non-automated ships while providing significant increases in the ability to gain and maintain target tracking and conduct coordinated engagements.

These developments represent a paradigm shift in combat systems architecture and capitalization of industry advancements in information transfer. They are part of a carefully constructed program to realize our goal of equipping a smaller, but technologically advanced Naval force with the best weapons in the world.

Sealift Ships

The continuation of the Sealift Ship program is vital to meeting the additional 5 million square feet of roll-on/roll-off capacity required to support two Major Regional Conflicts. Contracts for 5 ship conversions and 6 of the 12 new construction ships under contract have been awarded. Our budget request for fiscal year 1996 includes $596.1 million in the National Defense Sealift Fund to exercise new construction options for two ships, one to each shipbuilder.

Although the conversion ships are experiencing delays of about 11 months, the ships are expected to be delivered in time to meet Department of the Army requirements. The new construction ships are currently on schedule.

Surface Ship Industrial Base

We have been a fortunate customer over the past few years because we enjoy having enough capability and capacity in this industrial sector to build our ships. It is also clear, however, that our shipbuilding plan cannot continue supporting the entire industry.

Several things have happened recently that have helped to increase U.S. shipbuilders' ability to compete in the global commercial shipbuilding market. Various initiatives and programs executed by the Government have led to highly positive results.

The National Shipbuilding Initiative, which is President Clinton's five part plan for revitalizing commercial shipbuilding in this country, has provided a "jump start" for the industry. The Title XI loan guarantee program has provided the necessary capital for shipyards to modernize their facilities and has attracted ship operators to build commercial ships in this country. The Maritime Technology Program or Maritech facilitates the sharing of technology and enhances the producibility of ships.

Navy shipbuilding programs have also helped the shipbuilding industrial base. Our surface combatant shipbuilding programs have enabled shipbuilders to develop highly sophisticated modeling and simulation capabilities. The Sealift Ship program has also had a positive impact on the surface ship industrial base by not only providing much needed workload but also fostering development of skills transferable to commercial shipbuilding.

Our Foreign Military Sales have augmented the industry's viability by bolstering workload and providing global exposure for the high quality products which our industry can produce. In the far-term, we are considering a National Defense Features program that promotes adding national defense features to commercial ships. This program could provide an avenue for dual use technology if the shipbuilder can penetrate the commercial market with a suitable product.

CONCLUSION

In summary, we believe that the Department of the Navy's surface shipbuilding program is on track. We are doing the right things and building the right mix of ships to support our force level requirements. We believe that our budget request for fiscal year 1996 supports a rightsized, recapitalized, and ready Navy-Marine Corps team. We appreciate your support.

Thank you.

Senator COHEN. Thank you very much, Admiral Lopez. Although I am somewhat reluctant to do so, I would like to recognize Senator Lieberman for any opening statement he might care to make at this time.

Senator LIEBERMAN. I have no opening statement, Mr. Chairman.

Senator Cohen, but will have extensive questions no doubt.

Senator LIEBERMAN. Following the Cohen system for questioning, of course.

Senator COHEN. Admiral Lopez, let me turn to you first. How many new construction ships are in the 6-year shipbuilding plan?

Admiral LOPEZ. We have from 1995 through 2001: four in 1995, three in 1996, three in 1997, four in 1998, five in 1999, seven in 2000, and six in 2001.

Senator COHEN. If my numbers are correct, you have, roughly, 28?

Admiral LOPEZ. Yes, sir.

Senator COHEN. Which works out to about 4.6 ships average per year?

Admiral LOPEZ. Yes, sir. If that would be the average, yes, sir.

Senator COHEN. Assuming that there is a 35-year life expectancy, what does the average number of ships imply for a steady force structure?

Admiral LOPEZ. Well, if those were the only ships we built, then we would certainly have, and I am not a mathematician, less than 200.

Senator COHEN. It comes out to about 165. My understanding is that the Navy's goal was, roughly, 345?

Admiral LOPEZ. That is correct, sir.

Senator COHEN. I think we are being awfully optimistic under the assumptions reflected in the 6-year plan, but what has the experience of the Navy been in terms of maintaining these classes of ships for a service life of 35 years?

Admiral LOPEZ. I think 35 years is an optimistic assumption. However, our optimism is that we do have a technological edge. We have learned lessons in the past. We think we can have ships that last. We fully expect our DDG–51s, for instance, to last 35 years.

Senator COHEN. Well, my understanding is only the carriers have consistently gone beyond 35 years, and that is with a fairly extensive SLEP Program?

Admiral LOPEZ. That is correct, sir.

Senator COHEN. An expensive, I might add, SLEP Program; right?

Admiral LOPEZ. Yes, sir, it is.

Senator COHEN. In your statement, you point to an increase in the shipbuilding procurement account for fiscal 1997 indicates we are going to provide the resources for recapitalization. I looked at that 6-year shipbuilding plan and noticed its last 3 years, fiscal 1999 through the year 2001, reflect an average of six new construction ships a year, at a funding level of about $7.5 billion per year. If you procure at that rate over 6 years, you could generate a force structure of a little over 200 ships. Is that right?

Admiral LOPEZ. That is correct, sir.

Senator COHEN. What I am, I guess, looking at, and you are nodding, Secretary Slatkin, is we appear to be headed for a cliff at the end of that 6-year period. You are going to have to build between 10 and 11 ships a year over the long haul to maintain a fleet of 340 ships.

Based on the resources you have set aside for this 6-year plan, you are going to average—you will need to average about $13 billion a year for new construction, perhaps even more. Particularly if you talk about a new aircraft carrier, it looks like you will be closer to $16 billion, which would be a better figure to be looking at.

It will require something in the neighborhood probably of 20 percent of the total obligation authority of the Navy in order to achieve that. At the same time, as Secretary Slatkin has just pointed out in one of those charts, you are going to be looking at 20 percent just for shipbuilding, you have to contend with a new aircraft, the F/A–18E/F, or whatever emerges from the JAST Program, in large numbers.

How is that going to happen? I mean, I am "befuddled," I guess is the softest word I can use, in terms of looking down the road, in terms of what it is going to require for shipbuilding, the amount of money that is going to be available, and the notion that we will somehow come up with $16 billion in order to achieve that, not counting the new aircraft procurement? How do you expect to do that?

Admiral LOPEZ. There are a number of risks that we took as Ms. Slatkin has articulated. We knew that we had to save money; we had to make the Navy cheaper to run through BRAC, through regional maintenance, through outsourcing. We believe that at the turn of the century we will have between $4 billion and $5 billion per year in savings to apply to our shipbuilding and aircraft accounts.

Senator COHEN. Are these the same kind of savings that you have acquired to date through the BRAC process and the downsizing to acquire more ships, is that what you are saying?

Admiral LOPEZ. We are incorporating that into our procurement accounts. That is correct, sir.

Senator COHEN. What has happened to the savings to date that were projected to go into this recapitalization account from the BRAC process, from the downsizing, from the infrastructure reduction? Where has that money gone?

Admiral LOPEZ. We have placed all of the savings that we anticipate into procurement wedges in some of these ships that we are buying toward the end of the FYDP. We do not expect to fully realize all of our savings until the turn of the century.

Senator COHEN. Well, my understanding is the savings that were projected for the Navy in terms of its downsizing and the BRAC process, that money has been spent for quality of life, it has been spent for OPTEMPO, it has been spent for Somalia, Haiti, Vigilant Warrior, et cetera. The money that was supposedly going to be spent for recapitalization has not gone into recapitalization at all; it has gone into operations. Is that right?

Admiral LOPEZ. A large amount of that money has gone into operations, sir. Those are one of the risks that we have articulated in the past. We generally believe that we are funded to operate in three areas, the Mediterranean, the Western Pacific, and the Indian Ocean. Last year, we had an OPTEMPO that was higher than any time since we started calculating our OPTEMPO in 1975. We were in eight different areas last year. That did absorb a great deal of our money.

Senator COHEN. The point I am making is that there have been projections made in terms of saving, money going into an account for recapitalization, and those savings have disappeared. They have not gone into recapitalization; they have gone into either quality of life, enhancements, or to these unexpected or unanticipated contingencies.

Admiral LOPEZ. Some of those savings, some of those anticipated savings, have gone into that area, sir.

Senator COHEN. Where have the rest gone?

Admiral LOPEZ. We have invested in ships, as you have already articulated, an average of six in the last 3 years. We spent the quality of life money and OPTEMPO money in the near-term.

Senator COHEN. My time has expired. Ordinarily, Senator Lieberman would be next, but I am going to yield to Senator Thurmond.

Chairman THURMOND. Well, thank you.

A few years ago Secretary Lehman recommended a 600-ship Navy. Of course, that has gone by the board. How many ships do you think we really need?

Admiral LOPEZ. I think the number is about right, 346, as a requirement. I believe we can cover the major areas of the world and stay forward engaged and transition into war as required if we have about that level. We may need to balance the force a little differently than we have it now, but the numbers are about right.

Chairman THURMOND. If you get more money, what ships would you buy?

Admiral LOPEZ. In the near-term, sir, I would buy combatants, the DDG–51, I would buy an LPD–17; if I had more money, I would buy an AOE–11; if I had more money, I would buy an LHD–7; and I would start a new carrier. But I have spent a lot of money in that sentence, sir.

Chairman THURMOND. Secretary Slatkin, I just want to commend you. I hear mighty good reports about your work.

Ms. SLATKIN. Thank you, Mr. Chairman.

Chairman THURMOND. Your husband is on the staff here, and does a fine job. It is nice that husband and wife can both be engaged in defense activities, and we are very proud of both of you.

Ms. SLATKIN. Thank you, Mr. Chairman. I appreciate it.

Chairman THURMOND. Keep up the good work. I have another engagement I have to go to.

Senator COHEN. Thank you very much Mr. Chairman. Senator Lieberman.

Senator LIEBERMAN. Thank you, Mr. Chairman.

Secretary Slatkin and Admiral Lopez, thank you for being here and for your excellent testimony. I read the section of your prepared testimony on the DDG–51 program with some interest, and I appreciate particularly what you say in your statement which is, "The DDG–51 program is doing very well with regard to cost schedule and fleet performance goals. Five ships will be delivered to the fleet this year, each within cost goals and on schedule. Both shipbuilders are delivering high-quality ships that are performing superbly in the fleet."

Am I correct in my understanding that the Destroyer Program is currently operating with the Navy allocating new ship construction between two yards, as opposed to their being a competition among any shipbuilder who might want to build destroyers?

Ms. SLATKIN. Yes, Senator, you are correct. Last year we needed to determine how we would buy six ships. We decided to allocate three ships to one shipyard and three ships to another shipyard, and not compete the buy.

Senator LIEBERMAN. Let me ask you about your experience with that. Are you satisfied that that method of allocating construction between shipyards not only meets the strategic requirements of the Navy, but also ensures the taxpayers that we are getting the best bargain for our dollar?

Ms. SLATKIN. I could not have said it better, Senator Lieberman. This method of allocation works very well.

Senator LIEBERMAN. Am I correct in assuming from your comments that the Navy believes that the price it is paying for the DDGs is, certainly, a fair price?

Ms. SLATKIN. We have been getting a very fair price.

Senator LIEBERMAN. Let me take this line of questioning to the next step, which is to ask you about the Navy's method of procuring and overhauling aircraft carriers. There is of course only one builder of aircraft carriers in the country which is Tenneco at Newport News. It was this manufacturer that had a contract for the CVN–76 which was authorized and appropriated last year. Does this one builder of aircraft carriers, Tenneco, also perform carrier overhauls, specifically refueling overhauls such as you refer to in your prepared text like that scheduled for the U.S.S. *Nimitz* CVN–68?

Ms. SLATKIN. Yes. We have determined that Newport News will be not only the manufacturer of carriers, they are the only one for nuclear carrier construction, but we have determined that they will perform all of our nuclear carrier overhauls.

Senator LIEBERMAN. Are there other shipbuilders which will be able to compete, then, for the CVN–68 overhaul?

Ms. SLATKIN. There are other naval shipyards, yes.

Senator LIEBERMAN. Right.

Ms. SLATKIN. There is capacity elsewhere, yes.

Senator LIEBERMAN. You have made that determination?

Ms. SLATKIN. We made that determination, absolutely.

Senator LIEBERMAN. What is the basis of that determination?

Ms. SLATKIN. The basis of the determination was that the Navy Department wanted to ensure that we had adequate skills and adequate work at Newport News to perform carrier work. That is why we put the carrier overhauls there as well.

Senator LIEBERMAN. Is it fair to call it an industrial base judgment, that you wanted to maintain those unique skills there?

Ms. SLATKIN. Absolutely, that was an industrial base judgment.

Senator LIEBERMAN. Am I correct in concluding that there are on occasion unique aspects of shipbuilding or overhauling which argue for the Navy to manage the way contracts are apportioned, rather than competing them and letting the low-bidder win the contract?

Ms. SLATKIN. There are opportunities and instances where competition is not always the best approach. I think you can see in the case of DDGs and in the case of our nuclear carrier overhaul work where we have determined that competition was not the best approach and that allocation was the preferred method.

Senator LIEBERMAN. Right. In those cases, I presume, that the Navy still feels it is able to take into account not only national security interests, but also the best interests of the taxpayer?

Ms. SLATKIN. Yes, Senator.

Senator LIEBERMAN. I appreciate your answers to the questions. I hope they may shed some light on certain other judgments that the committee and Congress has to make this year with regard to another aspect of the shipbuilding program. With regard to that, let me just ask this final question.

Senator COHEN. The battleships, are you going to bring them back?

Senator LIEBERMAN. You are getting closer, a little bit lower, a little lower. You are getting closer, but lower.

Let me ask you about the way the Navy has allocated the resources available to it between building surface ships and submarines. I know that there is at least one analyst that suggested that the proportion of funds devoted to submarines in current and future year budgets is too high compared to surface ships.

While obviously we all recognize that if there were no budgetary constraints on the Navy you might choose to build more of one type of ship than another, my question really pertains to the reality of the budget that you have today and expect to have tomorrow. How confident are you that you have gotten the split between surface and subsurface ships about right for the level of resources available to you today?

Ms. SLATKIN. I will let Admiral Lopez follow my response. I believe quite clearly that we have attained the right mix. We have attained the mix right amongst our ships based on the age of our fleet, based on the needs of our fleet, and based on the long-term approach to recapitalize the Navy. We feel very confident and comfortable that we have attained the right mix of ships here.

Admiral Lopez, do you want to add anything?

Senator LIEBERMAN. Admiral Lopez.

Admiral LOPEZ. I agree with that, sir. We have to build our force structure based on requirements of the warfighting CINCs and the change in the threat environment and, when you consider the demise of the Soviet Union, would alter the force structure. That is why you have our current plan mix for submarines versus combatants versus carriers and amphibs, et cetera.

Senator LIEBERMAN. Is this mix at all affected by what you see of the mix of investment that the Russians are making in their Navy, which seems to be tilted more heavily toward submarines?

Admiral LOPEZ. I would say from the requirements point of view Russia, first of all to answer part of your question, is that they are building more submarines than we are. However, our numbers are mixed with respect to affordability, as well. We have to have a balance of forces to satisfy the warfighting CINCs requirements. If I could build more submarines or DDG–51s and was not constrained by affordability, I would. But that is also part of the equation.

Senator LIEBERMAN. I appreciate your answers, and I look forward to working with you on the surface and beneath it.

Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Lieberman. Senator Warner.

Senator WARNER. I defer to our leader.

Senator COHEN. No, go ahead, go ahead, please.

Senator WARNER. Oh, okay. This is a hearing today on surface construction, but my colleague has brought up subsurface construction, and therefore I am duty-bound to see if we can put this subject in a little balance here. First, he raises an important point, namely that Russia, the former Soviet Union, Admiral, Russia is now actively building and augmenting a great many of their subsurface assets. We cannot in open session go into those details, but I see you nodding your hair—your head.

Admiral LOPEZ. Hair? [Laughter.]

Senator WARNER. Hair and head. Would you not say that they are putting emphasis beyond what we anticipated on their subsurface construction. Certainly, several years ago and the demise of the Soviet Union, when we saw the surface fleet basically tied up, their need to continue a certain amount of strategic forces at sea was understandable. But they have gone way beyond that in a diversified R&D and construction program subsurface. Correct, sir?

Admiral LOPEZ. That is correct, sir.

Senator WARNER. Right. Now, given that, we have got to look to the next generation of U.S. submarines, for the moment designated Centurion; is that not correct? You anticipate perhaps as much as $50 billion for that program; am I not correct?

Admiral LOPEZ. Yes, sir.

Senator WARNER. Fine. Then, Madam Secretary, you said that for certain reasons you felt competition was not needed in certain areas. Are you telling the American taxpayers for a $50 billion program with the number of submarines as high as maybe 25 that you are ruling out competition?

Ms. SLATKIN. Senator, we strongly believe that we need to sustain two nuclear capable shipyards. We strongly believe in that view. We believe that the way to do that over the long-term is to build submarines at Groton and to build carriers at Newport News. We believe by doing that, by sustaining two nuclear shipyards, we ultimately retain the potential of competition for the future. It really is a question about timing and it really is a question about what the other elements of the equation are in terms of when is the right time to compete. I do not want to suggest to you that competition——

Senator WARNER. Well, let me interject very quickly. The first thing, there is a different set of circumstances have come about that may have driven the earlier decision to have these, just the two yards—one allocated to surface, one allocated to subsurface—and that is the emphasis that the Admiral just stated on the Russian program subsurface. To me that just moved off the table that old decision, and it should be reopened now.

You do not know whether or not just the $50 billion is the upper limit of that program. It may be far greater. I think this committee in another hearing will revisit this question of competition, but I was not going to let it slide by today without bringing to your attention that there are some of us who feel that that situation has to be revisited.

When you say keeping two yards nuclear-capable, you simply could not go down to Newport News if it had no new construction in subsurface and punch a button and say, "Come on to line, let us compete." You know and I know that it takes a constant level of effort in that yard to maintain a base such that competition can be achieved.

Ms. SLATKIN. You are absolutely right, Senator. If I may follow up?

Senator WARNER. Good. We will leave it at that then. Thank you very much. [Laughter.]

Ms. SLATKIN. If I may follow up, that is exactly the point that is inherent in our two-yard strategy. The concern that we have never taken down a nuclear-capable shipyard and then tried to bring it back. We are worried about the cost and we are worried about the risk of doing that.

Since the world has changed somewhat from what we forecasted initially, we are concerned about our ability to sustain a building rate well into the future. That is best done with two yards, because of the concern about the risk and the cost of losing one, either one. Yes, sir, I agree that over time we need two nuclear-capable shipyards, to ensure that we can build submarines and carriers well into the future.

Senator WARNER. Thank you very much, Mr. Chairman. Senator Lott.

Senator LOTT. Thank you, Mr. Chairman, for having the hearing. Thank you, Secretary Slatkin and Admiral, for being here this morning. I think this is a very important hearing. What really worries me about it is, while the Navy obviously is facing a number of challenges that require a lot of creative thinking to deal with these challenges, the big problem is the Navy shipbuilding program is totally inadequate, it looks like to me.

Last year, the Navy constructed only five ships, this year we have three. Of the money requested for new construction, 51 percent, over half of that $4.4 billion, goes for the purchase of one *Seawolf* submarine, and the mass procurement on the follow-on New Attack Submarine.

There is a tremendous shortfall here that we are just going to have to consider further. I hope that your testimony this morning will agree with me to that effect, and that we will begin to talk about what we are going to do about it to deal with these problems.

Let me just ask you a number of quick questions if I could. First, Admiral Lopez—well, let me say, Secretary Slatkin, if I could, recently you sent to Congress a report on the Navy's oceanographic survey and research requirements. I think most people, the general public, are unaware how important oceanographic work is to the operation of the Navy.

The report stated that you have a backlog of approximately 360 ship year equivalents of littoral survey, of which two-thirds need to be accomplished by oceanographic survey ships. Yet, the report states that the current eight-ship fleet can meet your requirements, which is obviously not the case.

What is the Navy doing to reduce the oceanographic survey fleet down to six ships or so? What are you going to do to do this research survey that you need with a declining number of ships?

Ms. SLATKIN. Senator, our shipbuilding plan includes an oceanographic ship to be purchased in fiscal year 1999. That will meet our force requirements, as I understand them, as they have been articulated by the CNO. That is our plan in order to meet those capabilities.

Senator LOTT. Admiral, do you want to add to that?

Admiral LOPEZ. As I have said in my answers to other questions, sir, a lot of things are driven by affordability, and not just what you would like to buy. But we are buying one T–AGOS and we are buying one oceanographic research ship. When I look at the ships' balance, that is what we can afford.

Senator LOTT. That is all you can afford, but that is not going to be adequate to do the oceanographic research survey work that is needed; right?

Admiral LOPEZ. It is going to take a heck of a lot more time, with the numbers that we have, it will take more time to get the job done.

Senator LOTT. Okay. Admiral, there are a number of people that are very concerned that the Sealift ships currently under construction will cost more to build than the contract award price for those ships. That is a program that I have supported for years, this committee supported years ago when we were not getting a lot of support from the Navy. Now it is going forward.

I know you have an interest in that. But we see that we are going to run into some problems, I am afraid. How many fast Sealift Ships are under contract? What is the contract value of the ships? Do you anticipate that the schedule will slip or the costs will go up?

Ms. SLATKIN. If I may, Senator, could I respond to that?

Senator LOTT. Yes.

Ms. SLATKIN. Right now, we have a requirement, as I identified, for 19 ships. Five of those are conversions, and those are already awarded. I responded to the Chairman that two of those, the lead ship at both NASSCO and the lead ship at Newport News, both are behind schedule of the lead ship.

I was at Newport News a week and a half ago, and they were beginning to recover schedule. In neither case will the fact that they are presently behind schedule cause them not to deliver on time. It is our assessment that in both cases, NASSCO and Newport News, at this point they will be delivered on time. Those are the conversion ships. Now, there are 14 new construction ships, 6 of those have already been awarded and we are not seeing any problems on performance on any of the new construction ships.

To your point about overruns, these are fixed-price contracts with a share line. We have to watch the performance of these contractors. We have to be concerned that they deliver on time, but these are fixed-price contracts.

Senator LOTT. Admiral Lopez, the CNO and the Secretary testified to our full committee that the Navy is facing a construction bowwave early in the next century. I have a chart that indicates that the ship construction account in the year 2002 will have to be about $16 billion, over three times the amount requested this year if the Navy is going to meet its ship construction targets. If this is accurate, what can you tell me about the number of ships required to be purchased in the year 2002 to 2004?

Admiral LOPEZ. Well, there is no question about it, Senator, there is a bow wave out there, and we have talked a little about that this morning with our dependence on having a cheaper Navy to run. We have to save $4 billion to $5 billion in the running of the Navy through BRAC and outsourcing and regional maintenance. If we do not save that, we are not going to get over that bow wave. That is our plan.

Even with that, on one particular year, as I recall, 2002, because of the carrier overhaul, we will have to look at that if we need to slide that up a year or something in order to make the bow wave, or dampen it down, if you will. But you are absolutely right, there is some risk out there, and we know that.

Senator LOTT. Secretary Slatkin, earlier this year the Navy decided to place the U.S.S. *Guam* in a reserve status in order to augment our amphibious shipping requirement. That decision was largely due to the decision not to build LHD–7. The U.S.S. *Guam* is already 30 years old, and you do not intend in your budget to build LHD–7 until 2001, or 6 more years. It will take 5 years to get it built, and that would mean the *Guam* would be 41 years old when the next LHD–7 is available. How much will it cost to place the *Guam* in this reserve status, and what is the life-cycle cost of the *Guam* for these 11 years?

Ms. SLATKIN. Senator, I do not have the answer to that. I would be happy to provide it for the record.

Admiral LOPEZ. I do not have the cost, sir, but we can get that for you. That is not something we would like to do. Most of our ship purchases are done on an affordability basis. We think it is absolutely mandatory to give the Marines what they need in the lift.

When we planned our program, that is why we planned to keep the U.S.S. *Guam* around. It is to cover the vehicle lift and all of the other vehicle requirements, helicopter lift, that the Marines need. The LHD–1 class is a wonderful ship but we just are not going to be able to afford it right now as the budget is currently constructed.

Senator LOTT. Would you at least get for the record the cost of placing the *Guam* in this reserve status for me?

Ms. SLATKIN. Absolutely.

Admiral LOPEZ. Yes, sir.

[The information follows:]

The U.S.S. *Guam* was originally scheduled to decommission in fiscal year 1997. The Navy is programming $178 million through the Future Years Defense Program (fiscal year 2001) to retain her in commission as a Naval Reserve Force ship. The Navy has not programmed funds beyond the Future Years Defense program, however the costs for the period fiscal year 2002 through fiscal year 2007, would be approximately $215 million.

Senator LOTT. If we make other decisions, we will know how much we are saving by not putting the *Guam*, perhaps, in the reserve status.

My time has expired. Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Lott. Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman.

Admiral Lopez, in following up what Senator Lott was just questioning you on, you say that we are going to save money so that we can dampen down this bow wave through the BRAC. Yet, we just had a BRAC recommendation from the Pentagon that was far less than anyone had anticipated. Does that make sense?

Admiral LOPEZ. I think the BRAC plan of the Navy is the most aggressive plan of all of the services, sir. In fact, I know it is. I have looked at the statistics. I think our plan is very good. We do expect to get those savings. Now, there are risks. If contingency operations that happened in the past year continue to happen over the next 4 or 5 years, that will eat up our savings.

Senator MCCAIN. Well, Admiral, what about something a little more predictable; and that is, the environmental cleanup, which the costs have been astronomically higher than we had ever anticipated? Are you taking that into calculation when you are talking about all of these wonderful savings we are going to get through BRAC?

Admiral LOPEZ. Yes, sir, those were underestimated, no question about it. They have eaten into some of our savings. Most of those, fortunately, are one-time costs, but it is a hump that we have got to get over.

Senator MCCAIN. Well, Admiral, I think it is a little more than a hump. I think when you look at the cost estimates of cleanup, and bases all around the country, we have not even cleaned up from the first round of closing, much less this latest.

You find that the differences are sometimes by a factor of 5 or 10, and the estimates of when the cleanups will be completed go well into the next century—certainly past the period of time that you are talking about when we are going to realize all of these savings.

I think it is a very slender reed to lean on, to anticipate enormous savings because of BRAC that will somehow allow us to restore our robust shipbuilding program. But perhaps that is just a matter of opinion.

Secretary Slatkin, I understand that the Secretary of the Navy issued an order that the battleships would be broken up into scrap; is that correct?

Ms. SLATKIN. I am not aware that that is correct, Senator.

Admiral LOPEZ. I do not recall seeing any direction for those to be broken up into scrap. I do not think that decision has been made, sir. But I will check, if I can take that and get back to you for the record.

Senator MCCAIN. Okay. Well, would you support such a move, given especially the enormous amount of money we have spent on technology and weapons retrofit on the battleships?

Admiral LOPEZ. We need the battleships capability in the sense, and so we have to replace that for Marines support ashore. We have a very aggressive program for naval fire support ashore that will involve a new gun system. This is being personally driven by the CNO, as well as one of the classes of ships that we are looking at for SC–21 will be a power projection ship that would carry 500 to 1,000 missiles that could support our Marines ashore, things like Tomahawk, that sort of thing. We are aware that the guns particularly off of the battleships need to be replaced, and we are working that issue.

Senator McCain. Well, that is comforting to know that you are working that issue. You had also stated that savings from acquisition reform will free up resources for the Navy's investment programs. What amount of savings are you assuming in the Navy shipbuilding program from acquisition reform?

Ms. Slatkin. Across the Department, we are only assuming a 1 percent savings in our planning from acquisition reform. We were attempting to be very conservative here, because we have watched—I have watched and Admiral Lopez has watched—several administrations come forward and say we are going to try to get savings by changing the way we do business. It has not yielded any change in terms of the way we spend money for systems.

We wanted to be very cautious about the kinds of savings that we took for the future. One percent is what we have allotted. I sincerely hope that our aggressive plan we have underway will yield much more than 1 percent savings.

Senator McCain. Thank you, Madam Secretary. Is the Navy currently estimating that the first two submarines, *Seawolf* submarines, will be completed within the cost cap?

Ms. Slatkin. Yes, Senator. As I mentioned earlier, we have taken a number of very aggressive actions to change the way we are doing business on the waterfront, to change the cycle time, and to bring real stability to the program so that we can deliver these two submarines under the cost cap.

Now, as you know, Senator, the cost cap was $38 million less than the initial estimate that Secretary of the Navy provided to the Congress. But we understand that, and we are going to work to meet the cost cap. That is our intent.

Senator McCain. Well, I am glad to know that.

Mr. Chairman, last week we had a hearing in the Readiness Subcommittee where retired Chiefs of the services testified. One of their major concerns was the dramatic draw down Senator Lott pointed out in his statement in acquisition of ships and tactical aircraft.

I do not know the answer, except to realize that when we talk about saving money through the BRAC process, acquisition reform, all of those things simply are illusory. I am very much afraid that in deference to readiness which all of us support we have basically emasculated the shipbuilding program for the U.S. Navy.

I find it very difficult to believe that these illusory cost savings which the Secretary pointed out has also been trademarks of other administrations as this, these are not the first witnesses we have had who have come before this committee and talked about how we are going to have all of these cost savings through acquisition reform, competitive contracting, et cetera, et cetera, and BRAC. They never have been realized.

I think that we ought to have a duty to the American people to at least inform them that there is going to be a point sometime in the next century where we are going to have to either accept a dramatically reduced naval presence, or we are going to have to spend a lot more money.

I think it would be better if we spent a little more money now than have to encounter this train wreck sometime after the turn of the century. I would hope that in the full committee and on the floor we could have a vigorous debate on this issue. I am fully aware that the Secretary and Admiral Lopez are driven by affordability, as the Admiral says.

But if that is what we are totally driven by, Admiral Lopez, then I do not think we should waste time in these hearings. I do not think we should waste anybody's time, just fit it into the very small box that fiscal constraints have confined us to.

It would be nice if somebody made an evaluation as to how badly we are going to be, as far as our ability to meet our vital national security interests are concerned, if we continue along this trend of acquiring two or three ships a year. I thank you for your time, and I thank the witnesses.

Senator COHEN. Thank you, Senator McCain. As a matter of fact, we are thinking along the same lines when you use the word "illusion." Admiral Lopez says, and Secretary Slatkin, that we are proceeding at some risk, put down the word "mirage." As I look at that funding level, I do not see it as a reasonable possibility.

When they talked in terms of $16 billion for the SCN account in the year 2001, or whatever, that is not realistic. It is not going to happen. That is not counting aircraft. That is just for the SCN account. That is 20 percent of the entire Naval obligation authority going just for shipbuilding; it is not going to happen.

We are deluding ourselves, I agree with the Senator from Arizona. When you raise the issue about ship to shore fire that is provided by the battleships, as I understand it, the new ship we are talking about is coming on line when? The middle of two-thousand-what? Ten? Fifteen?

Admiral LOPEZ. Yes, sir. If we built the fire power projection ship, but we are looking at upgrading the current gun that we have on our cruisers and destroyers that would give you——

Senator COHEN. Even that is 5 to 6 years away, is it not?

Admiral LOPEZ. That is right, yes, sir.

Senator COHEN. The gun is 5 to 6 years away, and the ship is at least a decade or 15 years away; right?

Admiral LOPEZ. I think we could get that power projection ship in a decade. Senator, let me come back to the issue that was raised. Senator Thurmond asked you what you would spend money on if you had more money, and the two ships you have indicated would be the DDG–51 and the LPD–17. Would it be fair to characterize these two ships as very important to the Navy's areas of operation?

Admiral LOPEZ. Yes, sir.

Senator COHEN. With respect to the Destroyer Program, DDG–51 Program, I assume that it is doing very well: cost, schedule, performance?

Ms. SLATKIN. At this point it is doing very well in terms of cost, schedule, and performance.

Senator COHEN. In other words, they are very mature, you have a pretty solid track record with respect to the DDG–51 Program; right?

Ms. SLATKIN. Yes.

Senator COHEN. Now, let me come back to the year-to-year changes. The 6-year shipbuilding plan that was submitted in last year's budget had 22 ships, then we come to this year and we find that we have got only 15, and so we have lost 7 ships in 1 year. Where did the money go for these ships? We lost, by the way, two DDG–51s and four LPD–17s.

Admiral LOPEZ. Well, we have invested in quality of life programs and funding today's Navy. We lost, as you recall, two DDG–51s and a New Attack Submarine in the FYDP.

Senator COHEN. Four LPD–17s.

Admiral LOPEZ. Yes, sir.

Senator COHEN. These were the two ships that you give fairly high priority to in terms of your littoral operations, more so than, I would assume, submarines for that kind of operation?

Admiral LOPEZ. Sir, we still are planning on, even though we slipped LPD–17 by 2 years we still plan on buying five of those ships in the FYDP.

Senator COHEN. Both Defense Secretary Perry and Deputy Secretary Deutch indicated that we needed to have two yards for the Destroyer program. I pointed out that the CRS study indicated that we could not maintain two yards, based upon the current projection levels of anything less than three ships a year.

When Secretary Deutch recently announced the delay of the procurement of the two DDG–51s until the year 2001, he announced savings of $1.2 billion. What I would like to know is, what do your figures show is the average cost per unit of the 51, during that 6-year program?

Ms. SLATKIN. First let me say, Mr. Chairman, that it is the Navy Department's view that we can sustain two shipyards at the rate of 2.7 ships a year.

Senator COHEN. I know what the Navy's position is.

Ms. SLATKIN. The average ship in fiscal year 1996 with two ships is about $1 billion a ship. If we had three ships in fiscal year 1996, it would be about $950 million a ship. That is the difference in terms of the unit cost.

Senator COHEN. My understanding is that it is, roughly, $52 million per ship that will be added to the cost of the procurement rate; right?

Ms. SLATKIN. That is, roughly, correct.

Senator COHEN. Over that 6-year period, it is not a $1.2 billion savings. You are actually adding about $830 million; right?

Ms. SLATKIN. It will cost more in fiscal year 1996, yes.

Senator COHEN. It will add about $830 million over the total purchase of these ships during that 6-year period under the profile of the Navy's right now. It is not a $1.2 billion savings. You are actually going to increase the cost of each ship times the 16 ships, it works out to about an $830 million increase, not saving. What you simply have done is deferred the increase until the year 2001; right?

Ms. SLATKIN. I am not directly familiar with the numbers that you used. But, yes, what we have done is move two ships out of the FYDP. That is absolutely right, Senator.

Senator COHEN. Right. Thereby, increasing the ultimate cost of the program by $830 million?

Ms. SLATKIN. Of the total program, that is probably true, yes, sir.

Senator COHEN. Okay. I assume this was done because of, again, resource constraints? This was done basically to accommodate the building of the *Seawolf* and the follow-on?

Ms. SLATKIN. No, Mr. Chairman, in this case we should be clear with you. This was a decision on the DDGs in fiscal year 1996 that was based entirely on making sure we had adequate funds for quality of life and readiness.

Senator COHEN. Strictly quality of life? Not for the third *Seawolf?*

Ms. SLATKIN. No, sir.

Senator COHEN. All right. Now, you indicated just briefly in your statement that you designated a study group to come up with an acquisition recommendation. My understanding is that there has been at least an initial report given to you by the study group?

Ms. SLATKIN. I have met with them once, yes, Senator.

Senator COHEN. Have they not furnished you with a report?

Ms. SLATKIN. No, they have not.

Senator COHEN. You do not anticipate it until some time this summer?

Ms. SLATKIN. I believe that I am supposed to see them next week to get this interim report that you mentioned.

Senator COHEN. Would you be in a position to at least share that with us?

Ms. SLATKIN. Absolutely. I would be happy to.

Senator COHEN. Okay. Let me turn to the LPD–17 Program. Last year, the LPD–17 was slated for initial procurement for this year, and that has now scheduled for fiscal 1998. What has been the reason for the slippage on this? Is it cost? Is it something that Congress has dictated in terms of design? What is driving it? What is driving the slippage here?

Admiral LOPEZ. We simply could not afford it in fiscal year 1996. As I recall, fiscal years 1996, 1997, and 1998 were all years in which we had to balance based on our budget. We decided to not only move the LPD–17 2 years to the right, but because of that of course we bought back some LKAs and LSTs in order to make sure that we covered the Marines' lift requirements. It was strictly an affordability decision for us.

Ms. SLATKIN. Mr. Chairman, if I may? You asked the question about whether Congress had imposed any design requirements that caused us to move the ship 2 years to the right. The simple answer to your question is, no, there have not been any imposed design requirements that forced us to move the ship.

Congress has told us, and we are happy to go along with this, to put Evolved Sea Sparrow Missile on this ship class and to put Cooperative Engagement Capability on this ship class. From my presentation earlier, you can see that those are things we want to do.

Given the time required to develop the Evolved Sea Sparrow Missile, were we to start LPD–17 in fiscal year 1996, we would not be able to have the lead ship with the Evolved Sea Sparrow Missile on it. We would have to integrate it a little later, because the schedules do not quite match. But, it was not the reason that we delayed the ship.

Senator COHEN. Do you intend to competitively award this ship?

Ms. SLATKIN. That is clearly my intention, yes.

Senator COHEN. How many yards now are competing?

Ms. SLATKIN. There are five yards that are capable to compete.

Senator COHEN. All technically viable?

Ms. SLATKIN. All capable to compete, yes.

Senator COHEN. My time has expired. Senator Lieberman.

Senator LIEBERMAN. Thank you, Mr. Chairman.

Just briefly, there have been discussions here about the decisions you have made with the resources. You have affordability constraints.

It does seem to me as I listen and as I review what you have done that you have done as well as you can do with what you have. You are also responding to concerns that have been expressed here in Congress, in this committee, over the last couple of years, about the quality of life of the people in uniform.

You know, the word "mirage" was just before us. I think of "miracle." You cannot perform miracles here with the money we have. You have only so much. All of this is by way of saying that I appreciate the constraints on you.

I for one support the sentiments expressed here that one way to respond to the concerns that my colleagues have spoken of is to increase the amount of resources you have. Perhaps, the subcommittee, the overall committee, maybe even Congress itself can help to do that. Again, as I view it, you have done as well as you can with what we have given you.

Let me just go back briefly to something that I asked in an earlier question in response to a comment made by my friend from Mississippi about the allocation of the shipbuilding construction. In this fiscal year—that is, fiscal year 1996—the assertion is that within the shipbuilding account, between submarines and surface ships, most of the resources this year—that is to say more than half—are going to submarine building.

Is it not true that last year, for instance, quite the opposite was the case, that the overwhelming majority of funds went to surface ships?

Ms. SLATKIN. Yes. In fact, if you look at the history of the last decade, I believe you will see a very different picture as well. Yes, in fact, it is true. The Congress has not authorized or appropriated funds for submarines since fiscal year 1991.

Senator LIEBERMAN. Right. We know that by the level of activity in Groton, I can tell you. It is not quantified here, that is to say in dollar terms, so I cannot make a judgment based on dollars. In the FYDP that you have presented us with, I would guess that it is also true, but just looking at the fact that if the SSN–23 has its funding completed, and we have stretched out the acquisition schedule for the New Attack Submarine to two over this period of time, that there are only three subs out of a total of 28 new ships to be constructed. The great majority of funding over the period fiscal year 1996 to fiscal year 2001 will go to surface ships as well. Is that correct?

Ms. SLATKIN. That is correct, Senator. The majority of the ships and the majority of the dollars will go to surface ships and to the next carrier.

Senator LIEBERMAN. Thank you, Secretary Slatkin.

Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Lieberman. Senator Lott.

Senator LOTT. Since there has been considerable mention of the improvement of the quality of life, Admiral, or, Secretary, how much more has been added in that area? Give me some examples of what you are talking about.

Admiral LOPEZ. There is an example in the budget scrub last year, in the end as I recall we had $135 million added to housing. What I would like to do, if I may, is to give you a complete breakout, which I do not have with me today, on what we have spent on quality of life in this budget.

Senator LOTT. Well, I would be interested in that. We are all concerned about quality of life, but the worst offender of quality of life is inadequate ships and the high tempos that keep crews at sea extended periods of time.

The tragedy of this budget is that we are not going to have the ships to do the job, and the crews are going to be stretched out terribly. I worry about quality of life. I want them to have adequate pay, adequate housing, child care, and decent facilities. I was on a naval base just yesterday looking at all of those facilities.

The tragedy is what we are doing in terms of what they are having to do, because we do not have adequate ships. When you have a crew that comes into shore like we did last year on an LHA, I guess it was, and then they had to put right back out to sea and go down to Haiti, that is the worst tragedy of all.

I really question the judgment that you are spending hundreds of millions of dollars more over in this area, when you do not have an adequate shipbuilding budget. Do you want to respond to that, sir?

Admiral LOPEZ. I could not agree with you more, sir. The finest quality of life or the quality of life that we have to be interested in is the quality of life of our sailors at sea. That has to come first and foremost. We are examining that this year, as we did last year, and I would like to get back to you with what we are doing about that.

Senator LOTT. Okay.

Admiral LOPEZ. If you cannot win, if you cannot stay forward engaged, if you are underway more often than you ought to be, if you are breaking OPTEMPO, then that lack of "quality of life," if you will, will drive our sailors out of the Navy. We are very concerned about that, and that is why we are trying to maximize our shipbuilding program with the funds that we have.

Ms. SLATKIN. Senator, could I add a thought on this?

Senator LOTT. Sure.

Ms. SLATKIN. As I said earlier, we really have a prudent approach here. We have the youngest average age of our fleet that we have seen in a decade. Over the long-term, we all understand we have to build at higher rates to sustain a 346-ship Navy. We also understand that we have to find ways to pay for that by making ourselves more economical, as Admiral Lopez said.

I do not want to leave the wrong impression here. We have the youngest fleet that we have had in over decade. We felt that at this point in time because of the age of the fleet, we could take the prudent risk, to make sure that we paid for near-term readiness and for quality of life as well, to keep our sailors and marines in the service and ready for whatever they may have to do.

Senator LOTT. In the Navy if you do not have ships and planes, it is all for naught. If you have young but inadequate numbers, it is all for naught. I understand that you all have to defend the numbers, but at some point somebody is going to have to come up here and say, "We cannot accept this. It is unacceptable."

Some admiral, some secretary has to come up here and say, "Yes, we were ordered to do this for budget reasons, and it is wrong. It is wrong for our Navy." I am not asking you to do that today, just to help us any way you can, and then we will try to fix what is a major problem, in my opinion.

Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Lott.

Just a few more questions, Admiral Lopez. Secretary Deutch recently signed out on a congressionally directed study, and the Navy, I guess, is preparing this study now in terms of how we can convert or use or call upon our commercial ships such as refrigerated carriers fitted with national defense features. They could perhaps offer some kind of a cost-effective enhancement of the military Sealift capacity. Do you think that we ought to promote this type of enhancement, Admiral Lopez?

Admiral LOPEZ. Yes, sir, I do. It makes sense to be able to do that, if we can do that within affordability. Certainly, if you go back to the British experience in the Falklands, that was a useful capability. We do want to look at that. I have not seen Secretary Deutch's study, but we would be interested in doing that within our budget constraints.

Senator COHEN. I think there is a general concern certainly on the part of this panel that the diminishing shipbuilding capacity, the loss of seafaring mariners is going to handicap our ability to respond in these contingency circumstances. It is something that we think that perhaps building an active ready reserve force, which is at least comprised in part of these commercial ships which are outfitted with some national security features, would be very beneficial and cost-effective at the same time.

You may or may not be aware of this, there is a possibility that Congress might repeal the Shipping Act of 1984 and also eliminate the Federal Maritime Commission. Do you have any opinion about what this would mean for the national security interest of the country?

Admiral LOPEZ. I am sorry, sir, I do not. I would like to get back to you for the record on that.

Ms. SLATKIN. As would I.

Senator COHEN. Okay. I will submit several questions to you for the record. Just one final area, Inter-Marine contracts, my understanding is there has been quite a bit of delay of performance shortfalls on the Inter Marine contracts. What is the current status of the ships on the contract now?

Ms. SLATKIN. We have ships at Avondale and at Inter-Marine. We have had delivery problems with the ships at Inter-Marine. We are in the process of having discussions with Inter-Marine to yield a way to a solution about how to get delivery of the ships.

Senator COHEN. Is there a conflict or a dispute over the claims by Inter-Marine?

Ms. SLATKIN. Yes, there is quite a conflict, there is quite a dispute. We have requests for equitable adjustments by one of the shipyards, and we are in the process of dealing with that now.

Senator COHEN. Are they meeting performance requirements at this point?

Ms. SLATKIN. We have no deliveries from Inter-Marine and the ones that we have from Avondale, to the best of my knowledge, yes, they are meeting their performance requirements.

Senator COHEN. I will ask you a few more specific questions for the record on that.

Ms. SLATKIN. I will be happy to take it for the record.

Senator COHEN. Let me just close out and thank the both of you for coming this morning. As we indicated, this is about surface ships, and not about submarines. We intend to have another hearing devoted to the high priority that has been placed by the Navy on the SSN–23.

Also, I think, a more detailed rationale in terms of this issue that you have heard here today, namely the allocation in terms of future shipbuilding as far as the new SSN, the Centurion, in terms of whether that should be or can be competed between two yards, or whether the allocation that has been at least recommended for the time being is going to remain.

We will need a much more detailed assessment of that, and you will have time to prepare for that at a future hearing. We have a strong interest in it, and I think there is going to have to be a fairly strong rationale put forward by the Navy in order to sustain a noncompetitive environment for the Centurion or the follow-on submarine.

Thank you both for coming. I assume you will be back soon again, and we look forward to your testimony at that time. Thank you.

Ms. SLATKIN. Thank you, Mr. Chairman.

Senator COHEN. The meeting stands adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR WILLIAM S. COHEN

SUBMARINE FORCE STRUCTURE

Senator COHEN. Ms. Slatkin, your statement that the relatively young surface fleet allows you to make prudent short term reductions in surface shipbuilding. I don't have the exact numbers, but it would seem to me that the same argument could easily be applied to our attack submarine fleet, also quite young. In fact, I could probably make a stronger case since you are aggressively decommissioning young submarines you have already paid for while for surface combatants you are well short of your force structure objective. Would you please comment?

Ms. SLATKIN. The Navy's integrated attack submarine force structure plan maintains a force level of 45 to 55 SSNs by balancing submarine inactivations, refueling overhauls and submarine construction. This decade will see a considerable reduction in submarine authorizations from the previous years. In the decade from 1991 to 2001, the Congress will authorize only four SSNs. In the previous decade 29 were authorized. The Navy plan, which calls for construction of SSN–23 in fiscal year 1996 and construction of the lead New Attack Submarine in fiscal year 1998, is the most cost-effective program to maintain the required SSN force level and achieve the Joint Staff requirement of 10 to 12 *Seawolf* quiet submarines by the year 2012. Any further reductions to the planned build rate will seriously jeopardize our ability to maintain the SSN force level and quality required in the next century as well as our ability to sustain the required industrial base.

In order to draw down to the required force levels, in the next several years we will inactivate 33 of our older SSNs. This will reduce the average age of our SSN force. However, to meet long term force level requirements, we must produce about two SSNs per year after the turn of the century. This will allow us to maintain the minimum required force levels when we are decommissioning 688 class submarines in large numbers at end of life.

Senator COHEN. Ms. Slatkin and Vice Admiral Lopez, Secretary Deutch recently signed out a congressionally directed and Navy prepared study on defense features that concluded that commercial ships, such as refrigerated car carriers, fitted with national defense features could offer a cost-effective enhancement of military sealift capacity. Do you agree that the construction and operation of these types of vessels would enhance our Nation's military sealift capacity?

Many of my colleagues and myself are concerned that diminishing shipbuilding capacity and loss of seafaring mariners will handicap the military's ability to respond to future contingencies. Would building an active RRF comprised in part of vessels equipped with national defense features help maintain our shipbuilding and ship operating sectors?

Ms. SLATKIN. Yes, privately owned commercial ships constructed with National Defense Features are a cost-effective and attractive alternative to the current aging inactive RRF operated by the government. The National Defense Features program would not alter the Department of Defense's current Strategic Sealift/RRF ship acquisition but would serve for future recapitalization of the RRF.

Building an active RRF program is very attractive in that it provides for new commercial type ship construction for U.S. shipyards and an increased active pool of skilled merchant marine officers and seamen to maintain the industry and marine time skills base. However, such a program cannot provide the sealift needed in the very near term. This is why the Joint Staff puts very high priority in the expeditious acquisition of RO/RO's for the inactive RRF.

LPD–17

Senator COHEN. Ms. Slatkin, your statement indicates that the LPD–17 program is utilizing an Integrated Process and Product Development Team for the LPD–17. Please explain as specifically as possible your use of this term for the program. Will it apply to production as well as development?

Ms. SLATKIN. The LPD–17 Integrated Process and Product Development Team is a group of specialists from each of the technical disciplines required to develop and execute a ship acquisition program. Currently these experts are organized into working teams for Program Management, Total Ship Integration, Ship Design, Cost Engineering, and Industry. We plan to work with industry to develop a feasible interactive teamwork approach that will be applied throughout the detail design and production phase.

AIRCRAFT CARRIER

Senator COHEN. Ms. Slatkin and Vice Admiral, Lopez, I noticed in reviewing the Six Year Shipbuilding Plan that there is Advance Procurement in fiscal year 2000 and fiscal year 2001 for an aircraft carrier. What is [the] operational requirement for this carrier? Why do we need it?

Ms. SLATKIN. The Navy's operational requirement to maintain a force of 11 active and one operational reserve/training carrier is specified in the Bottom-Up Review. The 12 carrier force is this Nation's primary force used to maintain a credible forward presence in the areas of national interest, to respond in time of crisis, and to fight and to win our wars, when required. As the cornerstone of our naval force, the carrier will continue to be used to provide rapid crisis response and continual forward presence whenever and wherever deemed appropriate by higher authority, without regard to agreements with other nations.

Senator COHEN. What is determining the fiscal year, presumably fiscal year 2002, that you plan to procure it?

Ms. SLATKIN. The Navy's aircraft carrier force structure requirement is 11 active carriers and one operational reserve/training carrier. In order to modernize and maintain this force structure, carriers must be replaced. U.S.S. *Constellation* (CV–64) is scheduled to be decommissioned in fiscal year 2008 at the end of her service life. Upon her scheduled retirement, *Constellation* will have been commissioned for over 47 years, including a Service Life Extension Program that extended her life an additional 15 years. With today's design and building techniques, construction is taking 6 to 7 years, therefore, a replacement for *Constellation* would require funding not later than fiscal year 2002.

Senator COHEN. What design options exist for it? Will it be a repeat *Nimitz* or a new design that incorporates recommendations from several recent studies? Are the cost estimates in the Future Years Defense Program based on a repeat *Nimitz* or another alternative?

Ms. SLATKIN. The cost estimates are based on a repeat of CVN–76, the 9th *Nimitz* class aircraft carrier. A totally new design aircraft carrier could not be awarded in fiscal year 2001 or fiscal year 2002. Additional Research, Development, Test and Evaluation funding for development and design is under review which could be used to incorporate some of the technologies recommended in recent studies. In addition, a 2 year assessment of what technologies should be incorporated in a future aircraft carrier is currently being conducted.

Senator COHEN. Assuming for discussion that the next carrier is a repeat *Nimitz,* what separation between CVN–76 and CVN–77 would be optimal from both construction efficiency and industrial base perspectives?

Ms. SLATKIN. The optimum separation is believed to be about 3 years, however, heel-to-toe construction to maintain the hull erection trades is considered to be the next critical point of separation. Since this trade essentially completes their tasks at ship launch, currently scheduled for December 2000, a contract award not later than fiscal year 2000 would be necessary.

QUESTIONS SUBMITTED BY SENATOR JOHN W. WARNER

SQQ–89

Senator WARNER. Ms. Slatkin, it has come to my attention that the Navy is considering re-competing the SQQ–89 contract in fiscal year 1996. Reviewing the initial documents, it is clear that the Navy intended to down-select to a sole source supplier and that this tenant was understood by all competitors. The Navy's justification for sole sourcing procurement in fiscal year 1992 was based on insufficient annual production requirements to keep two sources operating at minimum cost effective capacity. Since the contract was awarded, the prime contractor has met or exceeded all contract specifications and delivered the system well below anticipated costs. Additionally, reopening competition may well increase procurement costs. Recompeting this contract at this point indicates an arbitrary implementation of policy by the Navy. What has changed since the original contract was awarded that would compel the Navy to re-open competition of this highly successful program? What advantage does the Navy hope to gain in cost, performance or schedule by re-competing this procurement?

Ms. SLATKIN. The Navy's dual source strategy for SQQ–89 production was instituted in fiscal year 1987 with the competitive selection of Westinghouse as the designated second source. The original source was General Electric. At that time the projected SQQ–89 market supported annual competitive buys that could reasonably be split to ensure that both contractors remained incentivized to stay in the market. In fact, the Navy competed the fiscal year 1990 and fiscal year 1991 procurements in keeping with this strategy.

The procurement picture was dramatically changing just as the strategy was being implemented, however, as the projected quantities dropped significantly. In both fiscal year 1990 and fiscal year 1991 the offers were such that the competition ended up "winner take all." Westinghouse won the fiscal year 1990 competition. General Electric won the fiscal year 1991 competition.

After award of the fiscal year 1991 contract the projected quantities had dropped to the point where the assumptions for the dual source strategy were no longer valid. The Navy corresponded with both sources, who both indicated that if they were to lose 2 years in a row, they would leave the market. The Navy decided to abandon its dual source strategy in favor of a winner take all competition for fiscal year 1992 plus three option years.

It is fundamental to an understanding of this situation to note that:

(1) The fiscal year 1992 procurement was not a sole source procurement, it was a competitive procurement,

(2) The Navy's intent was to "down-select" to a single source for the fiscal year 1992 buy, as opposed to maintaining dual sources, and further

(3) The decision to "down-select" in fiscal year 1992 was NOT a decision to "down-select to a sole source supplier" in fiscal year 1996. It was, rather, a decision to *stop supporting* a second source with guaranteed business or some other form of subsidy.

While it is true that the Navy expected Westinghouse to be in a sole source position for SQQ–89 in fiscal year 1996, it never had the intention of precluding competition in fiscal year 1996. Today there is still no intention on the part of the Navy to subsidize a potential competitor to the incumbent. On the other hand, General Electric (now Lockheed Martin) has stated they wish to propose on fiscal year 1996 SQQ–89 requirements.

The Navy has realistically assessed the costs of competing the fiscal year 1996 SQQ–89 procurement. We can reasonably expect to recover these costs. Our anticipation of savings from a competition is based on the simple view that, since we understand the contractors' costs very well after three fixed price competitions, the critical unknowns are not the offerors' costs, but their bidding strategy. For example, it is not unreasonable for us to assume that the price difference between a sole source negotiated contract and a competitively awarded contract for the same items would be on the order of 5 percent. Given the value of the planned contract, this is a significant difference. As another example, our experience tells us that the total "bid and proposal" cost burden for a sole source negotiated contract would be comparable to that for two or more competitive proposals, simply because of the disclosure requirements burden on a sole source offeror.

In fiscal year 1992 the Navy did not even address, much less anticipate, that there would be a chance of saving money through competition in fiscal year 1996. The reason for this was that both General Electric and Westinghouse told us they would leave the business if they didn't win the fiscal year 1992 contract. The significant change since then is that General Electric was acquired by a large defense conglomerate with a different business strategy, namely Martin Marietta (now Lockheed Martin), who has told us they intend to stay in the business and that they want a chance to compete.

A competition for SQQ–89 in fiscal year 1996 will not impact ship schedules or system performance. In addition, having two competent suppliers provide inputs as we develop the requirements (which include significant acquisition reform initiatives such as a performance specification and deletion of MIL–SPECs and MIL–STDS) will provide the Navy two sets of "better ideas" rather than just one.

The Navy continues to believe that the added cost of a competition will be offset by the expected cost savings. Sound management principles and the Competition In Contracting Act therefore demand that the Navy compete in this case. We do not believe that we are setting arbitrary policy, rather that we are carrying out national policy.

We will choose our next SQQ–89 contractor with great care, being very sensitive to which offeror can provide the best value to the taxpayer.

AN/BPS–16

Senator WARNER. Ms. Slatkin, in a January 24, 1995 memo from you to the Assistant Secretary for Financial Management concerning the $4.5 million appropriated in fiscal year 1995 for procurement of AN/BPS–16 submarine radars, you state: "After review of several options for the use of the funds, I support a plan to procure seven AN/BPS–16 mast assemblies and integrate them with existing AN/BPS–15 inboard electronics." Your memo goes on to state: "I request that we proceed with this plan and seek release of the deferred funds."

In a March 30, 1995 letter you state that the Navy does not intend to backfit the AN/BPS–16 on SSN–688 class submarines, and that you are "reviewing alternatives for the use of these funds."

What happened between January 25, 1995, and March 30, 1995, to cause you to change your position on the AN/BPS–16 program?

Ms. SLATKIN. The Navy's position has not changed. The January 24, 1995, memo expressed my support for the release of the $4.5 million appropriated in fiscal year 1995. The March 30, 1995, letter reported the status of the $4.5 million. It remains on hold at the Office of the Secretary of Defense, and a decision on the use of this money will be made during the review of funding requirements.

AN/BPS–15

Senator WARNER. Ms. Slatkin, please provide for the record the total annual amount of money the Navy is spending to maintain the AN/BPS–15 radar—including that being spent to reverse engineer/replace obsolete parts.

Ms. SLATKIN. The following tables reflects the funding profile over the Future Years Defense program (dollars in millions):

Fiscal year 1995, $2.696; fiscal year 1996, $3.287; fiscal year 1997, $3.294; fiscal year 1998, $3.324; and fiscal year 1999, $3.454.

Senator WARNER. Ms. Slatkin, I understand that there was a recent collision between a U.S. submarine and a merchant ship in fog conditions in the Hong Kong harbor. Was the BPS–15 in operation at the time of the collision?

Ms. SLATKIN. The BPS–15 radar was in operation at the time of the collision and the merchant contact was held on the BPS–15.

Senator WARNER. Was the Navy using a clamp on radar? Is the clamp on radar certifiable for use on ocean going merchant ships? Is it fog capable?

Ms. SLATKIN. U.S. Navy submarines carry a clamp on radar as an aid to navigation. The clamp on radar was not in operation at the time of the collision.

None of the various models of commercial radars carried on U.S. submarines are certifiable for use on ocean going merchant ships of comparable displacement. They do not meet all of the recommended performance standards of Inter-Governmental Maritime Consultative Organization Resolution A.477 (XII) (19 November 1981)

Inter-Governmental Maritime Consultative Organization Resolution specifications do not define fog capability. Target detection parameters are only defined for clear weather. Inter-Governmental Maritime Consultative Organization Resolution specifications require anti-clutter devices to suppress unwanted clutter and precipitation but do not specify target detection requirements in fog.

Senator WARNER. How much damage was done to the submarine, and what will be the cost of the repairs?

Ms. SLATKIN. Damage was minimal:

— Two 2′ x 2′ sections of Special Hull Treatment were detached from the ship's aft port quarter and the lower section of the rudder.

— The towed array fairing tube was damaged.

The cost of repairs has not been estimated. The ship is scheduled to begin inactivation in June 1995 and the repairs in question will not be made.

AN/BPS–16

Senator WARNER. Ms. Slatkin, how much is the unit cost the reduced cost version of the AN/BPS–16 radar? How much is the unit cost of the full MILSPEC AN/BPS–16?

Ms. SLATKIN. There are two alternatives of the reduced cost AN/BPS–16 which are currently being considered:

— Alternative 1: Replace AN/BPS–15 inboard electronics and AN/SPA–25 repeater with a commercial-off-the-shelf transceiver unit and display. Replace the AN/BPS–15 antenna with a AN/BPS–16 antenna. The present AN/BPS–15 pedestal would be modified and a new antenna controller provided. Procurement cost is $120,000 per ship and installation cost is $50,000 per ship.

— Alternative 2: Replace the entire AN/BPS–15 radar and AN/SPA–25 repeater. Install a AN/BPS–16 mast assembly, commercial-off-the-shelf transceiver and display. Procurement cost is $400,000 per ship and installation cost is $200,000 per ship.

The MILSPEC AN/BPS–16 procurement cost is $900,000 per ship and the installation cost is $220,000 per ship.

QUESTIONS SUBMITTED BY SENATOR CHARLES S. ROBB

ASSESSMENT OF A REDUCED ACQUISITION PROFILE ON FUTURE READINESS

Senator ROBB. Ms. Slatkin, during your testimony you indicated that one of the reasons that you could take a "prudent risk" in pursuing a reduced acquisition profile was because the relatively young age of the surface fleet today. Reduced numbers of ships means increased underway days with additional wear and tear on the ship and crew. This can eventually result in increased maintenance costs and time as well as lower morale for our Navy crews. What is the military assessment of a reduced acquisition profile on future readiness?

Admiral LOPEZ None of Navy's readiness measures currently indicate a decline in long-term readiness. That said, it has become very difficult to maintain the correct balance in our readiness accounts. There is very little flexibility in the execution of readiness funds.

The focus today, as it should be, is on near-term readiness. The Secretary of Defense has directed that. You cannot in good conscience send people out on deployments into crisis situations without having them at peak readiness. Therefore, we must focus on near-term readiness. We have done that while still funding some good programs, such as the F/A–18E/F (next-generation variant of the Hornet fighter/attack aircraft). We are still building DDG–51 class destroyers although in fiscal year 1996 the budget contains only two. We are still building the SSN–23 submarine. We would like to build the LPD–17 in fiscal year 1998. We would like to have built it sooner, but we didn't have the money.

The problem is not that we are not modernizing our forces—the problem is that we are not building enough. If the Navy stays at this modernization pace, over time the fleet will get older and more obsolete. We don't want that to happen. Simply put, we can't have low shipbuilding and procurement budgets like this for very long before the Navy is in trouble.

As you know, our modernization plan is dependent upon our ability to shed older, less capable ships and aircraft and attain shore infrastructure base closures. If we are unable to apply realized force structure reduction savings to our ship and aircraft building and modernization programs, as planned, our plan to be ready in 2001 will require additional funding.

In striving for balance among force structure, readiness and modernization our building programs are not as robust as they have been in the past; we have reluctantly slowed modernization. But given the funds available, I believe we have made the right choices to ensure both current and long-term Navy readiness.

DDG–51 AEGIS SHIPS

Senator ROBB. Ms. Slatkin, what is the extra cost per ship that we will pay due to an acquisition plan of 2.7 ships per year instead of the previous plan of 3 ships per year?

Ms. SLATKIN. DDG procurements were reduced in the Future Years Defense Program from 18 to 16 ships in order to support quality of life initiatives. The result was a savings of $1.3 billion through the Future Years Defense Program.

Procuring two fewer DDGs in the Future Years Defense Program, however, did impact the average unit cost of each destroyer, which increased the cost per ship by $46 million. Over the Future Years Defense Program, the average unit cost went from $1,025 million per ship for 3 DDGs per year to $1,071 million per ship for 2.7 per year.

DON SHIPBUILDING AND CONVERSION

Senator ROBB. You indicated that you were sacrificing a third DDG–51 largely to pay for quality of life issues. My analysis of the Navy's budget shows that only $261.7 million is being spent this year on quality of life issues. Could you please clarify how this relatively small amount of the total Navy budget ended deferring the third DDG?

Ms. SLATKIN. The fiscal years 1996–1997 Department of Defense budget request incorporates a long term modernization/recapitalization strategy. An important part of this strategy is that the current reduction in force size means a lower average age for systems which in turn allows some delay in recapitalization. In addition, insertion of new technology in existing systems also ensures long term capability and lower life cycle costs thus avoiding repeated new systems procurement. The decision to postpone the third DDG–51 was only one part of the overall balancing of needs throughout the Department of Defense which enabled the Department to focus resources on current quality of life needs such as readiness, military pay and general quality of life requirements.

Senator ROBB. Ms. Slatkin, during your testimony before the Seapower Subcommittee it became apparent that the present shipbuilding plan could only support a fleet of 185 surface ships. The 1993 Bottom-Up Review suggested that a surface force of 345 ships were required to support the Navy's mission. Does this year's Shipbuilding Conversion, Navy budget mean that the Navy no longer agrees with the 1993 Bottom-Up Review for the size of our surface fleet?

Ms. SLATKIN. No, the Navy supports the Bottom-Up Review figures for a force of 346 ships. As I indicated in my presentation, the relatively lower build rate is a prudent risk early in the Future Years Defense Program due to the relatively young age of the fleet today. Furthermore, the new ships we have are more robust and combat capable. We will have to increase the procurement accounts to support recapitalization efforts in the latter years of the Future Years Defense Program to ensure Bottom-Up Review force structure levels as our ships require replacement. That effort will necessitate a respective increase in funding that I mentioned will come from acquisition reform cost savings, execution of infrastructure reductions, and outyear real budget growth.

LHD–7

Senator ROBB. Ms. Slatkin, in 1994 the Navy indicated that the LHD–7 would be purchased in 2000. This year's budget pushes the LHD–7 procurement to 2001. How much will the LHD–7 cost by delaying its funding for an additional year?

Ms. SLATKIN. The current estimate for LHD–7 procurement in fiscal year 2001 is $2,089.7 million. In 1994, the LHD–7 procurement was planned for fiscal year 2000 and the estimate was $1,999.7 million.

Senator ROBB. Ms. Slatkin, in 1994 the Navy was authorized and appropriated $50 million to be set aside for the advanced purchase of the LHD–7. What has the Navy done with this $100 million?

Ms. SLATKIN. Fifty million dollars was authorized and appropriated in both fiscal years 1994 and 1995. The plan is to apply these funds against the fiscal year 2001 LHD–7.

AN/BPS–16

Senator ROBB. Ms. Slatkin, on January 24, 1995, in a memo to the Assistant Secretary of the Navy (Financial Management), you supported the release of $4.5 million in fiscal year 1995 funds for the procurement of AN/BPS–16 submarine radars. Your memo stated: "After review of several options for the use of these funds, I support a plan to procure seven AN/BPS–16 mast assemblies and integrate them into existing AN/BPS–15 inboard electronics." Your memo goes on to state: "I request that we proceed with this plan and seek release of the deferred funds." In a letter signed by you on March 30, 1995, you indicated that the Navy does not intend to backfit the AN/BPS–16 radar on SSN–688 class submarines, and that you are "reviewing alternatives for the use of these funds." What happened in the past 2 months to cause you to change your position on the AN/BPS–16 program?

Ms. SLATKIN. The Navy's position has not changed. The January 24, 1995, memo expressed my support for the release of the $4.5 million appropriated in fiscal year 1995. The March 30, 1995, letter reported the status of the $4.5 million. It remains on hold at the Office of the Secretary of Defense, and a decision on the use of this money will be made during the review of funding requirements.

AN/BPS–15

Senator ROBB. Ms. Slatkin, please provide for the record the total annual amount of money spent to maintain the AN/BPS–15 radar. Also please detail the amount of money spent to reverse engineer and replace obsolete AN/BPS–15 parts and the operational availability of the AN/BPS–15 radar?

Ms. SLATKIN. The total annual amount of money spent to maintain the AN/BPS–15 radar including money spent to reverse engineer and replace obsolete parts is shown in the table below (dollars in million):

Fiscal year 1995, $2.696; fiscal year 1996, $3.287; fiscal year 1997, $3.294; fiscal year 1998, $3.324; and fiscal year 1999, $3.454.

The operational availability of the AN/BPS–15 radar is 0.8.

AN/BPS–16

Senator ROBB. Ms. Slatkin, please comment on the Navy's plan to maintain the submarine radar industrial base until the New Attack Submarine is in full production.

Ms. SLATKIN. The Navy's plan addressing radar procurement is contained in the Command, Control, Communications and Intelligence portion of the New Attack Submarine Acquisition Strategy Report which is in review, pending final approval by the Office of the Secretary of Defense.

Senator ROBB. Admiral Lopez, last year it was the sense of Congress that the Navy required 12 Amphibious Readiness Groups (ARG) to meet two nearly simultaneous regional conflicts. How many ARG's does the Navy feel are necessary to maintain their present mission?

Admiral LOPEZ We have sized our Amphibious forces to fulfill two missions: crisis response and forward presence. We feel that 2.5 MEBs of amphibious lift is adequate to meet the requirements of two nearly simultaneous regional conflicts. We are confident that the 12 ARGs that we have programmed for will fulfill our forward presence requirements.

Senator ROBB. Admiral Lopez, can you comment on the status of the Navy's self defense program against stealthy cruise missiles?

Admiral LOPEZ The Navy has several sensor programs underway to improve our ability to detect, track and engage low radar cross section, so-called "stealthy" anti-ship cruise missiles. These efforts include: improvements to the AN/SPY–1 radar on CG–47 class cruisers and DDG–51 class destroyers; the AN/SPQ–9B radar upgrade for the CG–47 class cruisers and DDG–993 and DD–963 destroyers; and the Infrared Search and Track program which will be applicable to all ship classes. The advent of the Cooperative Engagement Capability in the fleet, incorporating sensor data from multiple ships that are geometrically dispersed, will further enhance our ability to combat low radar cross section missiles.

QUESTIONS SUBMITTED BY SENATOR JOSEPH I. LIEBERMAN

CONTRACTS

Senator LIEBERMAN. Ms. Slatkin, please describe how allowable profit margin and cost-share lines are determined by the Navy and industries awarded contracts to build ships for the Navy.

Ms. SLATKIN. Profit margins and cost-share lines are set in two different ways, depending on whether the pricing structure is established through competition or through negotiations. These two different scenarios are described below:

1. For competitive contracts, the profit margin is set by industry in the competitive marketplace, with industry giving consideration to performance and cost risk, desired return on investment, and overall business strategy. The Navy generally specifies the cost-share line in the request for proposals to allow ready comparability of proposals received. For most mature ship construction contracts, the Navy specifies cost sharing as 50 percent for the government and 50 percent for the shipbuilder. For lead ship construction, and highly complex ships with long construction periods, the Navy gives consideration to assuming a greater share of the risk of cost variance.

2. For negotiated contracts, after a fair and reasonable cost target is negotiated, the Navy establishes a negotiated objective for profit margin by use of the Weighted Guidelines method, which is prescribed in the Defense Federal Acquisition Regulation Supplement, Section 215.903(b). The weighted guidelines method rewards contractors in the following three areas:

— Performance Risk—the contractor is rewarded for his performance in the technical, management and cost control areas.

— Contract Type Risk—the contractor receives a lower reward for low risk contracts such as cost reimbursement types, and a higher reward for higher risk contracts of a fixed price nature.

— Facilities Capital Employed—the contractor is rewarded for its investment in productive assets.

On fixed price incentive contracts, a range of incentive effectiveness and profit rates throughout this range are negotiated, resulting in a cost-sharing line to be included in the contract. Consideration is given to risk, ship complexity, length of ship construction, and other factors.

Senator LIEBERMAN. Ms. Slatkin, please indicate the profit margins and cost-share lines negotiated by the Navy for the following classes of ships for the past 10 years (where these are very different with a class of ships, please indicate the range): frigates, destroyers, aircraft carriers, 688 class submarines, ballistic missile submarines, and *Seawolf* class submarines.

Ms. SLATKIN. The following is provided for the 10 fiscal years awards from fiscal years 1986 through 1995. The profit margins indicated reflect the target profit dollars at the time of award divided by the target cost (in unescalated "base year dollars") at time of award. These contracts also include provisions for the payment of escalation outside the target pricing structure of the contract. If estimated escalation at time of award is added to the target cost the calculated profit margin would be lower.

A. Frigates: No contracts awarded in the past 10 years.

B. Destroyers: Profit margins have ranged from 10.8 percent to 19.9 percent. The cost-share lines have been 50 percent government, 50 percent shipbuilder.

C. Cruisers: Profit margins have ranged from 14.2 percent to 17.4 percent. The cost-share line has been 50 percent government, 50 percent shipbuilder.

D. Aircraft Carriers: Profit margins have ranged from 21.7 percent to 22.2 percent, but the target cost have excluded facilities capital cost of money. On a comparable basis to the other profit margins reported here, the profit margins would range from 20.6 percent to 21.3 percent. On the fiscal year 1988 contract for CVN–74 and 75, the cost-share line was 75 percent government; 25 percent shipbuilder for cost outcomes below target cost; 88 percent government, 12 percent shipbuilder for a limited amount above target cost; then 50 percent government, 50 percent shipbuilder. On the fiscal year 1995 contract for CVN–76, the cost-share line was 80 percent government, 20 percent shipbuilder.

E. SSN–688 Class Submarines: Profit margins have ranged from 9.7 percent to 15.2 percent. The cost-share line has been 50 percent government, 50 percent shipbuilder.

F. Ballistic Missile Submarines: Profit margins have ranged from 14.6 percent to 17.9 percent. The cost-share line has generally been negotiated at 50 percent government, 50 percent shipbuilder. However, on the fiscal year 1991 contract for SSBN 743 the cost-share line was 50 percent government, 50 percent shipbuilder for cost outcomes below target cost; 75 percent government 25 percent shipbuilder for a limited amount above target cost; then 50 percent government, 50 percent shipbuilder.

G. *Seawolf* Class Submarines: Profit margins have ranged from 14.0 percent to 17.5 percent. The cost-share line has been 80 percent government, 20 percent shipbuilder for cost outcomes up to 130 percent of target cost; then 50 percent government, 50 percent shipbuilder.

Senator LIEBERMAN. Ms. Slatkin, slide 3 of your briefing provides the "Navy Shipbuilding Plan" in terms of numbers of ships to be procured. Please provide the dollar values associated with shipbuilding procurement broken down by class of ship from fiscal year 1985 to fiscal year 1995 and the forecast for the remainder of the Future Years Defense Program. Please indicate the total shipbuilding amount and the percentages for the surface and sub-surface ships.

Ms. SLATKIN. The attached tables provide all shipbuilding procurement amounts broken down by class of ships and percentages for surface and sub-surface ships for fiscal year 1985 to fiscal year 1995 and the Future Years Defense Program projection.

FY85-95 SCN Funding

	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	TOTAL
SSBN	1,303,202	1,167,863	1,292,842	1,323,325	1,322,270	1,181,862	1,284,581					8,875,945
SUB INDUSTRIAL BASE								540,200				540,200
CVN				6,728,291					829,400		3,468,880	11,026,571
CVN RF									6,800	31,127	38,059	75,986
SSN-688	2,749,187	2,415,707	2,454,843	1,838,448	1,358,599	808,083						11,624,865
SSN-21			374,999	257,595	2,148,096	586,253	2,172,088	234,677				5,773,706
BB		446,827										446,827
CV SLEP	707,842	49,448	83,468	729,145	62,680	700,078						2,332,661
CVN RCOH						1,597,228						1,597,228
CG 47	2,547,644	2,358,352	2,448,686	3,855,310								11,209,992
CGN RF									4,530			4,530
DDG 51	1,139,499	70,373	1,817,288	5,500	3,570,569	3,643,616	3,148,378	3,997,733	3,256,909	2,637,872	2,642,008	25,929,745
LSD 41	454,602	357,410										812,012
LHD 1	39,188	834,379	35,000	752,671	720,712	34,553	1,166,700		303,084	953,779	49,649	4,889,715
LSD (CV)				312,473		272,015	259,070	25,000	328,293			1,196,851
MCM	391,142	242,185				348,213						981,540
MHC		190,021			244,328	248,911	203,161	324,893	232,914			1,444,228
MCS (C)										123,575		123,575
TAGOS	69,348	31,733	170,609		220,522	182,100		9				674,319
TAO	570,912	265,434	262,503	252,979	817,772							2,169,600
AO (JUMBO)			51,621	40,765	79,180	39,744						211,310
AOE			597,637		395,026	390,125		199,084	326,350			1,908,222
TAG		72,734										72,734
OCEANOGRAPHICS	198,710		32,875			324,984		108,716		113,853		777,140
AE (C)											30,338	30,338
AFS(C)											22,677	22,677
MTS	30,427	175,400				226,188						432,015
SERVICE CRAFT	62,531	32,328	101,619	17,400	582	56,952	75,400	34,424	35,520	28,986	5,561	451,301
LANDING CRAFT	8,873					9,553	1,700					20,126
STRATEGIC SEALIFT	30,954	217,168	68,085									316,207
LCAC	224,454	247,260		35,270	302,878	285,668	263,363	383,902				1,722,791
OUTFITTING	194,907	158,403	172,393	135,333	125,543	175,018	188,900	238,045	327,617	210,903	157,044	2,082,306
POST DELIVERY	150,522	90,209	154,849	129,651	86,944	84,276	128,703	149,198	218,703	89,322	155,339	1,437,916
COST GROWTH		159,632										159 632

FY85-95 SCN Funding [Continued]

FIRST DESTINATION							5,800	5,939	6,031	5,793	3,912	27,475
WAGB						333,796						333,796
PATROL BOATS						79,497						79,497
TACS	29,597	72,765	69,200	53,099								224,661
TAVB	35,068	30,719										65,787
SOF/PC					1,530	97,194						98,724
ESCALATION								463,600				463,600
PY COMPLETION							237,000	40,000				277,000
SPECIAL SUPPORT						7,825						7,825
SSN STM CONDENSORS											993	993
PRIOR YEAR	979		87	1,090	818	525						3,297
TOTAL	10,937,588	9,686,348	10,188,604	16,468,543	11,457,845	11,694,255	9,132,842	6,745,422	5,876,351	4,195,210	6,574,460	102,957,466

FY85-95 SCN Funding

	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	TOTAL
Funding												
Sub-Surface	4,082,818	3,758,970	4,122,684	3,419,366	4,828,965	2,802,386	3,456,667	774,877	-	-	993	27,247,724
Surface	6,508,362	5,519,134	5,738,591	12,782,903	6,415,777	8,624,225	5,117,772	5,073,763	5,323,800	3,889,192	6,257,172	71,250,691
Other	346,408	408,244	327,329	266,274	213,103	267,644	558,403	896,782	552,551	306,018	316,295	4,459,051
TOTAL	10,937,588	9,686,348	10,188,604	16,468,543	11,457,845	11,694,255	9,132,842	6,745,422	5,876,351	4,195,210	6,574,460	102,957,466
Funding Percentage												
Sub-Surface	37.3%	38.8%	40 5%	20.8%	42.1%	24.0%	37.8%	11.5%	0.0%	0.0%	0 0%	26 5%
Surface	59.5%	57.0%	56.3%	77.6%	56.0%	73.7%	56.0%	75.2%	90.6%	92.7%	95 2%	69.2%
Other	3 2%	4.2%	3.2%	1.6%	1.9%	2 3%	6 1%	13.3%	9.4%	7.3%	4 8%	4.3%
TOTAL	100 0%	100 0%	100.0%	100 0%	100.0%	100 0%	100.0%	100 0%	100.0%	100 0%	100 0%	100.0%

FY96-01 SCN Funding

	FY96	FY97	FY98	FY99	FY00	FY01	TOTAL
CVN					471,421	157,263	628,684
CVN RF	221,988	316,489	1,984,152	74,393	232,678	341,223	3,170,923
SSN-21	1,507,477						1,507,477
NEW SSN	704,498	299,758	2,879,317	578,899	1,828,844	1,058,521	7,349,837
DDG 51	2,169,257	2,857,085	2,379,218	3,180,783	3,215,594	3,338,727	17,140,664
LHD 1						1,990,096	1,990,096
LPD 17			1,154,818		1,568,288	1,598,698	4,321,804
TAGOS				245,054			245,054
AOE SLEP			12,034	159,661		13,228	184,923
OCEANOGRAPHICS				87,380			87,380
AE (C)	62,130	94,320	66,490				222,940
AFS(C)	47,096						47,096
ADC(X)					574,666		574,666
SERVICE CRA	16,996	34,950		3,921			55,867
OUTFITTING	144,791	176,068	126,574	102,918	113,986	122,329	786,666
POST DELIVER	174,991	160,361	151,049	103,138	45,369	87,058	721,966
FIRST DESTIN	2,711	2,534	1,589	1,600	574	1,865	10,873
TOTAL	5,051,935	3,941,565	8,755,241	4,537,747	8,051,420	8,709,008	39,046,916

FY96-01 SCN Funding

	FY96	FY97	FY98	FY99	FY00	FY01	TOTAL
Funding							
Sub-Surface	2,211,975	299,758	2,879,317	578,899	1,828,844	1,058,521	8,857,314
Surface	2,517,467	3,302,844	5,596,712	3,751,192	6,062,647	7,439,235	28,670,097
Other	322,493	338,963	279,212	207,656	159,929	211,252	1,519,505
TOTAL	5,051,935	3,941,565	8,755,241	4,537,747	8,051,420	8,709,008	39,046,916
Funding Percentage							
Sub-Surface	43.8%	7.6%	32.9%	12.8%	22.7%	12.2%	22.7%
Surface	49.8%	83.8%	63.9%	82.7%	75.3%	85.4%	73.4%
Other	6.4%	8.6%	3.2%	4.6%	2.0%	2.4%	3.9%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

[Whereupon, at 11:05 p.m., the hearing was adjourned.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 1996 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, MAY 9, 1995

U.S. SENATE,
SUBCOMMITTEE ON SEAPOWER,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

DEPARTMENT OF THE NAVY'S IMPLEMENTATION OF ITS STRATEGY FOR LITTORAL WARFARE

The subcommittee met, pursuant to notice, at 9:34 a.m., in room SR–222, Russell Senate Office Building, Senator William S. Cohen (chairman of the subcommittee) presiding.

Committee members present: Senators Cohen, Kennedy and Robb.

Committee staff member present: Richard L. Reynard, staff director.

Professional staff members present: Romie L. Brownlee, Steven C. Saulnier, and Cord A. Sterling.

Minority staff members present: Arnold L. Punaro, minority staff director; and Creighton Greene, professional staff member.

Staff assistant present: Pamela L. Farrell.

Committee members' assistants present: Dale F. Gerry, assistant to Senator Cohen; Samuel D. Adcock, assistant to Senator Lott; Thomas L. Lankford, assistant to Senator Smith; Steven A. Wolfe, assistant to Senator Kennedy; Suzanne M. McKenna and John P. Stevens, assistants to Senator Glenn; William Owens, assistant to Senator Robb; and John F. Lilley, assistant to Senator Lieberman.

OPENING STATEMENT OF SENATOR WILLIAM COHEN, CHAIRMAN

Senator COHEN. This morning the Senate Armed Services Subcommittee on Seapower meets to review the Department of the Navy's strategy on Littoral Warfare and the various programs that support it in the context of the Fiscal Year 1996 Department of Defense Budget and for Future Years Defense Program.

Our witnesses this morning are Hon. Nora Slatkin, the Assistant Secretary of Navy for Research, Development and Acquisition; Vice Adm. Joe Lopez, U.S. Navy, the Deputy Chief of Naval Operations for Resources, Warfare Requirements and Assessments; Lt. Gen. Charles Wilhelm, U.S. Marine Corps, Commanding General, Marine Corps Combat Development Command. These witnesses play a crucial role in the identification of operational requirements for the Navy, the Marine Corps, prioritizing them, allocating the necessary resources and, particularly those in the case of Ms. Slatkin, procuring the equipment, the ships, the sensors and systems needed to satisfy them.

In late 1992, the Department of the Navy published, ". . . From the Sea," a strategic concept to define the combined vision and new direction for the naval services, the Navy and Marine Corps, as they prepare for and enter the 21st Century. ". . . From the Sea" envisions a post-Cold War environment in which Naval expeditionary forces shape for joint operations "Forward . . . from the Sea," exercising influence in the coastal or littoral regions in which most of the world's population resides. This concept represents a fundamental shift in emphasis away from the maritime strategy of the eighties, which emphasized offensive operations by the Navy's carrier battle groups and submarine forces against the Soviet Union, the strategic submarines and their defensive bastions. Instead, ". . . From the Sea" proposes a shift in focus away from warfighting on the sea toward joint operations conducted from the sea.

The Navy and Marine Corps will be structured as expeditionary forces that can respond to crises, provide the initial enabling capability for joint operations, participate fully in any sustained joint effort, cover the withdrawal of contingency forces as operations ashore are terminated, and then provide continued presence to avoid another crisis. The four key operational capabilities needed to execute this strategy are battle-space dominance, enhanced command and control and surveillance, power projection and adequate force sustainment.

A more recent companion piece, "Forward . . . from the Sea," emphasizes the peacetime forward present contribution of deployed naval forces.

Over 2 years have passed since the Department of the Navy published ". . . From the Sea." Today's hearing provides an opportunity to explore the progress the Department has made in reordering its priorities and reallocating its resources to implement its new strategy in the face of a significant reduction in its budget.

Many of the weapon systems capabilities needed to effectively fight in littoral regions, mine countermeasures, shore fire support, ship self-defense, were relatively low priority programs in the past.

By the benchmark ". . . From the Sea," we would expect that the priority of these programs will have to be increased.

We would expect that tactics will have to be developed to translate concept into operational reality. We would also expect progress toward a better integration of Marine Corps and Navy program priorities in the Department's resource allocation process.

And finally, we need to evaluate whether this new direction for our naval forces thus meets the country's national security needs.

Ms. Slatkin, Admiral Lopez, General Wilhelm, we welcome you.

I believe, General, this is your first appearance before the panel.

General WILHELM. Yes, sir.

Senator COHEN. Hopefully you will enjoy the experience and want to come back. We look forward to your testimony and the opportunity to gain some insight into the best way to sustain and employ the naval forces that protect our maritime Nation and its access to the seas. Senator Kennedy.

Senator KENNEDY. Thank you, Mr. Chairman, and I have put my statement in the record.

I think we have some special responsibility in overseeing the transition from the collapse of the Cold War, the collapse of the Berlin Wall and the increasing pressures and tensions which have involved some of the other Third World countries and how we are going to see the Navy and the Marines adapt to those kinds of new challenges.

The committee, as you know, Mr. Chairman, because you have been very much involved in these matters, has given special attention to improved countermeasures against mines, increased ship self-defense capability, improve the capacity to provide off-shore fire support for Marine Corps landing forces. And we are interested in improving the Navy's staff structure to emphasize the change in strategy.

So we are very interested in how we in the Congress can be supportive of the thinking that is taking place in DOD and ways that we can see that our security interests are going to be enhanced and preserved with these new challenges. And we are looking forward to hearing from our excellent witnesses today.

[The prepared statement of Senator Kennedy follows:]

PREPARED STATEMENT BY SENATOR TED KENNEDY

Thank you, Mr. Chairman. I join in welcoming our witnesses to the hearing this morning, and I look forward to their testimony.

I commend the Chairman for calling this hearing on this aspect of the Navy's warfare strategy. This is an important subject, and the subcommittee has taken a strong interest in it in recent years.

Fundamental changes in the post-Cold War years have raised basic questions about how the Navy should be structured to meet the challenges of the future. During the Cold War, the Navy had to be ready to prevail in a major conflict with the Soviet Union. Now, the Navy has begun to shift its focus to a strategy that meets the new challenges of this era, especially its ability to conduct off-shore warfare.

This committee has taken a number of initiatives in recent years to help the Navy shift to this strategy. These have included steps to:

- Improve countermeasures against mines.
- Increase ship self-defense capability.
- Improve the capacity to provide off-shore fire support for Marine Corps landing forces.
- Improve the Navy staff structure to emphasize this strategy.

Secretary Slatkin's prepared statement refers to cooperative engagement capability and ship self-defense programs. The subcommittee had a major role in bringing both these programs to reality. We look forward to continuing to work with the Navy as they adapt to this new outlook.

We are also interested in how the Navy proposes to balance its modernization program in relation to its force structure and readiness plans. These elements are related—today's investment in modernization of the Navy's force structure helps improve the readiness of tomorrow's forces. Achieving optimal levels in all of these measures is the primary goal of this subcommittee.

Thank you again, Mr. Chairman, for calling this hearing, and I look forward to the testimony of our witnesses.

Senator COHEN. Secretary Slatkin.

STATEMENT OF HON. NORA SLATKIN, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT AND ACQUISITION

Ms. SLATKIN. Thank you, Mr. Chairman, Senator Kennedy, and Members of the subcommittee.

It is a real pleasure to be here today to discuss our budget request for fiscal year 1996 and to talk to you about how it relates to littoral warfare. I do believe you will be pleased with the results that we are here to talk about today.

As you mentioned, Mr. Chairman, I am very pleased to be accompanied by Admiral Lopez, by General Wilhelm, and also by my Principal Deputy, Vice Adm. Bill Bowes.

The Navy Department is shaping its forces activities and programs in response to a changing world. We have shifted our focus to operating in littoral regions, those areas of the world where we believe conflict is most likely to occur.

Not only have we changed the way we organize, equip, train and operate our forces, we have also changed the way we think and organize. As Senator Kennedy mentioned, we have changed our organizational structure.

We see changes in our forward deployments, as you know. We see carriers operating in littoral areas. We see carriers working with amphibious forces and battle groups. But we also see improvements in the way we have organized our Department.

In particular, Admiral Lopez on the OPNAV staff has a Marine Corps major general on his staff responsible for expeditionary warfare.

We have established the Naval Doctrine Command in Norfolk to work with the other services, and to support them in terms of littoral warfare.

For us, littoral warfare is not a program, but it is a set of capabilities. I believe you will see that clearly. Our naval forces, as you said, Mr. Chairman, are inherently very flexible. So it is the equipment that you provide for our sailors and marines that allows us to operate effectively in the littoral.

As you know, we learned a number of lessons in Desert Storm. We learned that we have a number of deficiencies in warfare areas that are very important for littoral operations.

Therefore, what we would like to do today is discuss with you our plans to develop those warfare capabilities that our Nation desperately needs for the future and how our emphasis has shifted.

What I would like to do is talk about them not necessarily in terms of the four pillars you described out of ". . . From the Sea," but talk about them in terms of how we move from the sea to the land, in support of land operations.

I would like to do that in terms of amphibious lift, ship self-defense, Cooperative Engagement Capabilities, Theater Ballistic Missile Defense, mine warfare, Naval Surface Fire Support, improved maneuver and command and control. I will try and be brief in my description.

Amphibious ships, as you know, are our principal carriers of our power projection forces. We are modernizing these ships, to allow our Marine expeditionary forces to launch from over the horizon and execute our operational concept.

Our plan calls for 12 Amphibious Ready Groups, built around LHAs and LHDs, supported by two classes of LSDs, as well as the new LPD–17 class that we plan to buy.

We have devised a fiscally constrained plan to maintain the equivalent of 2.5 MEB lift in the near term. And you in this committee were very instrumental in insisting that we maintain a capability for 2.5 MEB lift.

As you know, our plan calls for a mix of Active Reserve and Ready Reserve assets, including the retention of the U.S. *Guam*. Our plan is on track. We have four highly capable LHDs delivered now to the fleet, and we are planning the delivery of two more.

Our long-term plan includes acquisition of a new class of ships—I believe we discussed it during our previous hearing, but I am happy to talk about it in more detail now—the LPD–17 with the acquisition beginning in fiscal year 1998.

This is our highest amphibious lift priority. Twelve of these ships would replace 41 aging ships that we have today. That is real value for the dollar. In addition, we plan to buy LHD–7 in the year 2001.

Whether we are in the objective area or en route, our ships must be able to defend themselves against cruise missiles and the lethal threat that they pose. To counter this threat, we are improving our short-range anti-ship missile defense system through the coordinated management of sensor, control and weapon systems programs.

We plan to incorporate ship self-defense on all of our surface ships, carriers, combatants, and amphibious ships. These efforts go a long way to improving the survivability of our ships.

Indeed, we are proceeding with a plan to upgrade Phalanx Close-In Weapon Systems that you have endorsed in the past.

Beyond individual ship defense, we are pursuing Theater Ballistic Missile Defense, also known to you as Lower Tier capability. This will enable forcible entry in the face of threats from cruise missiles or theater ballistic missiles. We plan to deploy a limited TBMD capability by the middle of fiscal year 1998.

Our Cooperative Engagement Capability ties our systems together. It integrates real-time data in terms of “sensor to shooter.” We successfully demonstrated it in the U.S.S. *Eisenhower* Battle Group demonstration last summer.

Our Fiscal Year 1996 program continues research and development efforts and we expect to achieve initial operational capability in late fiscal year 1996. This plan is consistent with the direction from the Congress and consistent with direction from the Secretary of Defense to accelerate this very important program.

As the fleet gets closer to the land, mines loom as a significant threat. Despite the historical lessons, I believe the three of us would tell you that we have shortchanged this area in the past. Today, we are trying to reverse that trend. We are moving toward a strategy of integrating mine warfare forces with our power projection force, so that we have a real organic capability.

Today, we have four ships in Europe or in the European theater of operations and two in the Far East dedicated specifically to mine countermeasures.

The shift is not only evident in what we buy, but also how we train. I am sure that Admiral Lopez and General Wilhelm will be happy to talk about some recent exercises where we have seen some major improvement in capability.

In addition, we have dedicated resources to building new platforms for mine warfare. We have a Mine Countermeasure class that have been delivered. We have 14 ships in the fleet today. We are in the process of getting delivery on our Mine Hunting ships. We have had some problems with the shipbuilder, but we believe that we are in the process of getting the ships. We have 12 funded. We are not asking for any additional funding here.

Efforts to improve our mine warfare capability also include research and development funds for an unmanned under sea vehicle, known as a UUV, and the joint Advanced Technology Demonstration for mine warfare that Gen. Jack Sheehan is running out of USACOM.

Projection of power from the sea requires fire support, as you mentioned, Mr. Chairman, for the landing force during the initial phases of the assault.

Senator COHEN. Are you going to bring back the battleships?

Ms. SLATKIN. As you know, sir, we have completed the retirement of the battleships recently.

Senator COHEN. What are we going to replace the fire support with?

Ms. SLATKIN. That is what I would like to talk about. We would be happy to discuss why the battleships were deactivated.

As you know, with the retirement of the battleships, we decided that we need precise long-range fire power to support our forces ashore.

Now, as you know, sir, we decided to retire the battleships because of their limited capability to deliver precision fire and because of their high cost of ownership. We would be happy to talk about that further in the questioning period.

We have not walked away from the need for precise long-range fire support to minimize not only the risk of collateral damage to civilians but also to offer protection for assault forces as they go ashore. To develop these capabilities, we have a plan for naval surface fire support. It calls for three key things.

Surface ship improvements to our 5-inch Mark 45 guns and propellants. Our goal here is to increase range and capability and provide that capability by the year 2001.

We also recently conducted a shipboard test of the Army's Tactical Missile System, ATACMS. We had a successful firing off of an amphibious ship, demonstrating that we can fire an Army missile, a long-range, deep strike missile, off of a surface ship.

For the long term, we are also looking at options for Surface Combatant 21, our next family of surface ships. We are looking at an option of building a firepower ship devoted entirely to vertical launch tubes, with long-range deep strike missiles. So there are opportunities in SC–21 as well, our next generation of surface combatants.

Senator COHEN. IOC would be when?

Ms. SLATKIN. IOC for SC–21, will not be for a long time, but IOC on improvements to the guns, will be around the year 2001.

Finally, our littoral warfare fleet includes the triad of AAAV, V–22 and LCACs. The AAAV, the Advanced Amphibious Assault Vehicle, will carry our combat Marines from ships over the horizon to the objective shore. We have begun a demonstration validation program for AAAV in this budget request.

The V–22 tilt rotor will give us an improved capability, that we have never seen, to project forces when it replaces the aging CH–46 medium lift helicopter.

Finally, Mr. Chairman, littoral warfare also requires that we have joint operations with land and air forces. It requires our ability to pass information seamlessly in the joint task force. We have a number of command, control, communication and information programs in this budget that we have before you dedicated to ensuring that we can integrate the battle force in a joint task force.

In closing, sir, we believe we are striking the correct balance in this program. We also believe that we have shifted priorities to meet the littoral warfare requirements, and we ask for your support.

I would like to thank you for the opportunity to present the program.

Senator COHEN. Thank you very much, Secretary Slatkin.

[The prepared joint statement of Ms. Slatkin, Admiral Lopez, and General Wilhelm follows:]

JOINT STATEMENT BY HON. NORA SLATKIN, ASSISTANT SECRETARY OF THE NAVY (REAEARCH, DEVELOPMENT AND ACQUISITION); VICE ADM. T. JOSEPH LOPEZ, USN, DEPUTY CHIEF OF NAVAL OPERATIONS, RESOURCES, WARFARE REQUIREMENTS AND ASSESSMENTS; AND LT. GEN. CHARLES E. WILHELM, USMC, COMMANDING GENERAL, MARINE CORPS COMBAT DEVELOPMENT COMMAND

Mr. Chairman, distinguished members of the subcommittee, thank you for this opportunity to appear before you to discuss Littoral Warfare and the Department of the Navy's budget request for fiscal year 1996.

As you know, in 1992 the Department of the Navy published the white paper ". . *From the Sea*" which signaled a shift in focus from maritime superiority to operating in the complex and challenging coastal waters and on the land contiguous to the sea. My purpose today is to describe to you how we are shaping our forces—within existing and forecasted fiscal constraints—to meet our Nation's needs in a violent and uncertain world.

The United States has been and will remain a maritime nation. Our free market economy is global—inextricably linked to hundreds of nations overseas. The preponderance of our trade with these nations flows by sea—the only economical mode of transportation. Just as important—over 90 percent of American war materiel will go by sea in the event of another major conflict.

Robust, combat-credible naval expeditionary forces are critical because they protect our national interests through forward presence, crisis response, and if necessary, by transitioning to combat. They are self-sustaining, sovereign, non-intrusive representatives of the National Command Authorities—forward deployed, flexible and capable of averting crises through the prudent display or use of force to support diplomacy. Naval forces are the most readily available tool with which to shape the international environment to America's advantage and prevent crises from becoming conflicts. Our continued economic prosperity is tied directly to our ability to influence events overseas on a daily basis.

Despite limited resources, we have seen our Navy-Marine Corps team perform superbly in a wide variety of missions over the past year. Carrier battle groups and amphibious ready groups with embarked marines are a visible symbol of America's commitment to remain engaged overseas and stand by our security agreements.

In recognition of the challenges posed in an uncertain international environment, the Department of the Navy developed and updated a strategic concept called "*Forward . . . From the Sea.*" This concept proposes that the Nation's naval forces execute a broad range of missions in the open ocean and littoral areas: forward presence, peacekeeping, crisis prevention, protection of our citizens in foreign lands, fighting and winning wars, and restoring peace on favorable terms. Accordingly, the Navy and Marine Corps are organized, equipped, and trained to perform these operations without relying on strategic airlift or permission from foreign governments to operate.

OUR SHIFT IN EMPHASIS

Most naval forces are multi-purpose, enabling us to meet maritime as well as littoral challenges. To support our strategic shift to the highly complex and demanding littoral environment, we have reordered our programmatic priorities, as reflected in both our research and acquisition programs as well as how we organize and train. Highlighted below are specific examples of the fundamental changes we have made.

In the littorals we encounter a meld not only of the physical elements of the sea, air, and land—but also a blend of friendly, enemy, and neutral people arrayed both conventionally and unconventionally. This creates a need for a new and improved suite of enabling systems to manage risk while operating in harm's way. We have a command and control architecture that is designed to be interoperable not only among the elements of the Navy-Marine Corps forces, but also among our sister services and allies. Importantly, it is designed to form the core of a joint task force command network. To be relevant and effective, we must protect the sea base from which we project power landward because the threat to our fleet from aircraft, missiles and mines increases in scope and complexity in the proximity of land.

Theater Ballistic Missile Defense systems, Ship Self Defense systems for non-Aegis ships, and our Cooperative Engagement Capability will enable a multi-service force to operate like a distributed system throughout the theater, gaining the benefits of integrating the use of all available sensors and weapons. This provides us an essential umbrella of protection throughout the stages of any foreseeable conflicts or crises.

Mines, both at sea and ashore, become an acute threat in the littorals. Several years ago we began a major modernization effort of our Mine Countermeasures Forces. The MCM and MHC classes of minesweepers/hunters now being delivered represent a major investment toward supporting mine warfare operations around the world. We are converting the U.S.S. *Inchon* to a mine countermeasures command and control support ship—a capability long lacking in forward operations. Our Mine Warfare Plan provides continuity across diverse efforts. We are addressing recognized deficiencies by developing mine countermeasures systems for the shallow water, the surf zone and ashore utilizing technologies from Unmanned Underwater Vehicles to lasers. This technologically demanding task is supported by an ongoing Advanced Concept Technology Demonstration which will actually integrate the capabilities of numerous Navy, Marine Corps and Army mine countermeasure systems under a common C^4I architecture. Our goal is to improve our doctrine and tactics as we develop equipment and train people for employing these systems in the littorals.

The retirement of the battleships, coupled with the need to station our ships further at sea to provide maneuver space, reduced vulnerability, and to create uncertainty in the mind of an opponent—all demand improved Naval Surface Fire Support. We have established a program to develop phased improvements which include near-term upgrades to the current capability, outyear fielding of Naval Surface Fire Support Missiles, and the possible development of a new naval gun.

Key to our shift to littoral warfare is addressing the block obsolescence of our amphibious ships. As we reduce the size of the fleet, we plan to retain a 12 Amphibious Ready Group (ARG) force. Our goal is to totally modernize our ARGs, providing the same capability we field with five ships today in three ships after the turn of the century. The new ARG will be comprised of an LHA or LHD with an LSD and a new class of ship, the LPD–17. The LPD–17 ship is being designed for improved survivability with a ship self defense system and a system for protection against airborne chemical and biological agents.

One of the unique capabilities naval forces possess for responding to crises or conflict in the littoral regions is freedom from land bases. Our Maritime Prepositioning Forces proved their value in Operations Desert Shield and Desert Storm. We plan to continue to support three squadrons of MPS ships and improve our capability with additional ships.

Projection of power ashore is the fundamental military action of our *"Forward . . . From the Sea"* strategic concept. Our operational concept, *"Operational Maneuver From The Sea"*, treats both water and land area as maneuver space and seeks to exploit enemy vulnerabilities through superior use of information and movement. This requires unparalleled mobility, and we have made major commitments to greatly enhancing our littoral tactical mobility with the V–22 and the Advanced Amphibious Assault Vehicle. Both of these programs result in dramatic speed, maneuverability and survivability improvements over existing aged systems. They will revolutionize amphibious operations.

In our submarine force planning, we were in production of the world's most capable attack submarine, the *Seawolf* class. We plan to end production of the *Seawolf* class at three ships and are now designing a more affordable New Attack Submarine. Not only will it be less expensive, but it will also incorporate features to improve operations in littoral waters. These include a new emphasis on support of Special Warfare forces, improved mine avoidance, reduced magnetic signature, improved surveillance equipment, systems for shallow water ASW, and a vertical launch system for higher salvo rates in strike missions.

THE NEED FOR A BALANCED PROGRAM

In these dynamic times, one of the greatest challenges for the Navy Department is to strike the right balance between meeting today's needs and planning effectively for those of the future. In 1994, we continued shaping and sizing the Navy infrastructure and force structure to meet the requirements of the post-Cold War world. To support the National Military Strategy and support a strong presence overseas, we need 346 ships and a minimum force of 174,000 active duty Marines. To ensure we can continue to support this rightsized force, we are shedding excess infrastructure and streamlining warfare centers, depots and procurement processes.

In 1994, much attention focused on maintaining readiness. Through continuous evaluation and adjustment of our programs, we have balanced near term force readiness while planning for the future. We have paid close attention to our most vital readiness asset—our sailors and marines—and emphasized programs that will improve quality of life and compensation. In fiscal year 1996 the Department will closely monitor readiness and adjust programs as needed.

Recapitalization is an important part of our long term plan. It includes a phased investment strategy for the weapon systems, platforms and equipment that will be needed in the future—with an emphasis on littoral warfare missions. It includes upgrades to existing weapon systems and new procurement. Our investment strategy to recapitalize reflects the fact that we have reduced forces commensurate with the current threat and created a smaller but more technologically advanced Navy and Marine Corps. We are pursuing this strategy to maximize the use of scarce procurement dollars without compromising the quality and capability of our warfighting force relative to the foreseeable threat. Our program continues to reflect the shift in emphasis to improving those capabilities required to operate *"Forward . . . From the Sea"* in the littorals. This shift is reflected in the growing percentage of Department of the Navy TOA allocated to accounts and programs which support littoral warfare and power projection.

Our near-term focus on maintaining readiness versus capital investment is a prudent risk for three reasons. First, although we prepare for major conflicts, the likely threat today is a less intense, less complex conflict that develops quickly. Second, aggressive procurement in the 1980s means we are still delivering new and very capable systems today. Third, post-Cold War force level reductions have allowed us to retire older and less capable platforms and weapon systems. The net effect is that the average age of many platforms is actually lower than when annual procurement budgets were higher.

The average age of our ships and aircraft reaches its lowest point this year. Consequently, we plan to gradually increase the procurement accounts later in the Future Years Defense Plan to support long-term recapitalization. Resources for this part of the recapitalization plan will come from acquisition reform cost savings, infrastructure reductions, and outyear real budget growth.

Our fiscal year 1996 budget request represents the beginning of a new phase in a carefully-constructed recapitalization plan. To explain our plan in greater detail, I have divided my testimony into three main parts. First, our modernization strategy; second, how our programs support the *Forward . . . From the Sea* strategy; and third, highlights of the individual programs represented in our fiscal year 1996 budget request.

I. OUR MODERNIZATION STRATEGY

We recognize that our programs must be affordable, executable, and relevant. We are investing in programs that will produce multi-mission platforms and weapon systems—true force multipliers—that can meet the variety of anticipated mission requirements. Consequently, recapitalization of our naval forces will not require a one for one replacement of weapon systems and platforms.

Although many of the core maritime warfighting competencies are also required to operate in the littorals, the proximity to land presents some unique challenges and threats. We must improve our defenses and power projection capability through programs like Tactical Ballistic Missile Defense, Ship Self Defense, Naval Surface Fire Support, our Mine Warfare Plan, a joint C^4I architecture, and improved maneuverability. With developments like the V–22, the Advanced Amphibious Assault Vehicle, and new classes of amphibious assault ships and submarines, we will increase maneuvering room in the littoral battlespace and make the Navy and Marine Corps more effective across the spectrum of potential operations.

We also recognize the need to reduce costs and make the acquisition process more responsive. Our acquisition reform initiatives address advanced technology insertion, cost reduction, and avoiding platform obsolescence.

Advanced Technology Insertion

In many critical areas, technology advances more quickly than the defense sector can respond. This is particularly true with computers and communications. The Department is taking advantage of commercially developed advanced technologies by incorporating them into acquisition programs early on. The Cooperative Engagement Capability program is a good example of rapid fielding of advanced technology—over 60 percent of it is commercial off-the-shelf and non-developmental items—to integrate real-time tactical data from ship sensors for exchange between weapon systems afloat and ashore. The *Eisenhower* Battle Group that just returned from deployment proved that the Cooperative Engagement Capability works. We can now see and engage threats earlier than ever before.

Cost Reduction

Affordability is the fundamental fiber in the fabric of all our programs. We strive to reduce the cost of both production and ownership by incorporating best commercial practices in the acquisition process, using commercial off-the-shelf and non-developmental items wherever possible, reducing the use of military specifications and standards, and making extensive use of modeling and simulation. These measures are an integral part of all of our new programs where we are using government/contractor integrated product teams to ensure that producibility is considered throughout the acquisition process. Life cycle cost reduction also plays an integral role in making the cost of ownership more affordable.

Avoiding Platform Obsolescence

Today's platforms represent a significant investment of the taxpayer's money. Since these ships and aircraft have a long service life, we have to find ways to avoid platform obsolescence over time. We are addressing this concern by designing new platforms with the potential to accommodate future performance upgrades. We are also updating existing platforms with weapon systems that will allow for future growth and capability enhancement.

II. HOW OUR PROGRAMS SUPPORT "FORWARD . . . FROM THE SEA"

The traditional forward presence and power projection missions continue to underscore the value of the Navy-Marine corps team.

To meet these missions, the focus and organization of our Naval forces have changed. As I said at the outset, the Navy Department is emphasizing littoral warfare and regional threats. With over 70 percent of the world's population and 80 percent of the world's capitals located within 300 miles of the sea, operating effectively in the littorals has become a primary concern.

Operation United Shield provides a telling example of the utility and unique contributions that forward deployed naval forces provide. The withdrawal of U.N. peacekeepers from Somalia was completed quickly, safely, and efficiently. There were no American or United Nations' force casualties. Over 3,000 marines and 3,200 sailors embarked in four amphibious ships, one support ship, and one surface combatant, along with special operations air assets, participated.

The operation ended with a classic amphibious withdrawal, undertaken in darkness, during which over 1,600 United Nations and American personnel withdrew with textbook precision in less than 4 hours. This complex evolution was completed earlier than projected at almost no cost to the American taxpayer because it was executed by forces already deployed in-theater. It is important to note that although we forged a consensus with neighboring countries before the operation began, it was not necessary to seek any nation's permission to enter Somalia from the sea. Secretary of Defense Bill Perry described the operation as "a moment of perfection in an imperfect world."

Although the threat and geopolitical environment have changed, we have a vision of what will be needed to meet the littoral warfare requirements of the 21st Century. Expanded carrier and amphibious task forces will merge to form a Naval Expeditionary Force, fully capable of executing forcible entry at the time and place of our choosing. By employing the mobility triad of the Advanced Amphibious Assault Vehicle, the V–22 tiltrotor aircraft, and the Landing Craft Air Cushioned (LCAC), we will be able to successfully maneuver from and through the sea to seize ports and littoral airfields. The Naval Expeditionary Force will facilitate the introduction of heavier U.S.-based ground forces and protect them from Theater Ballistic Missiles as they arrive. Naval forces are fully capable of conducting joint operations with these follow-on forces during all phases of the conflict. In addition, our underway resupply ships make possible sustained, around the clock strike and combat support operations, and create an unmatched sea-based logistics capability.

We acknowledge that all services have a role in littoral warfare and forward presence. However, we believe it is important to recognize the unique contributions of Naval forces—no one else can provide similar capabilities.

III. FISCAL YEAR 1996 PROGRAM HIGHLIGHTS

Our programs that support littoral warfare reflect the priorities established by the warfighters—the theater commanders in chief. Individual programs are described in greater detail below, grouped as they support the four key operational capabilities required to conduct littoral operations: Command, Control, and Surveillance; Battlespace Dominance; Power Projection; and Force Sustainment.

Command, Control, and Surveillance

Command, control, and surveillance enables us to coordinate complex warfighting actions, locate gaps in enemy defenses, and rapidly respond to changing battlefield conditions. Our surveillance efforts will continue to emphasize exploitation of space and electronic warfare systems to provide commanders with immediate information, while denying or managing the data available to our enemies. Command and control system capabilities are critical to domination of the battlespace and power projection, and are central to the precise application of power.

The requirement to control the sea coupled with our strong forward deployed presence has driven us to create a robust global Command, Control, Communications, Computers and Intelligence (C^4I) structure. Our Joint Maritime Command Information system forms the backbone of the Global Command and Control system. Because Navy and Marine Corps forces routinely operate together, we have developed a command and control system for operating across the shoreline. The cornerstone for this integration of the C^4I battlespace is the Copernicus Architecture. It is our principal initiative to make C^4I systems more responsive, allow us to field systems more quickly, and to capitalize on new advances in technology.

The Tactical Shipboard Unmanned Aerial Vehicle (UAV) will provide near real-time information and an organic surveillance asset on demand. Through integration with the ship's combat weapons system, we will also have the capability to "net" the sensor data and disperse this information to other platforms using existing data highways.

Battlespace Dominance

The battlespace is the air, surface, land, and subsurface environments where we conduct our operations. Battlespace dominance means that we can maintain control of these environments as a prerequisite for power projection ashore. Dominating the battlespace involves ensuring effective transition of our forces from open ocean to littoral areas, and from sea to land and back, to accomplish the full range of potential missions. This is the essence of naval adaptability and flexibility which are the keys to contingency response.

Aircraft Carriers

The Bottom-Up Review and defense planning concluded that 12 (11 active plus 1 operational reserve) aircraft carriers are needed to meet warfighting and overseas presence requirements. Sea-based tactical aviation is one of the most critical capabilities we bring into a littoral warfare scenario.

In fiscal year 1995, we awarded the contract for *Ronald Reagan* (CVN–76), our ninth *Nimitz* class nuclear aircraft carrier. Our nuclear carrier program continues on track with *John Stennis* (CVN–74) scheduled for delivery later this year, and *Harry Truman* (CVN–75) under construction in Newport News. These carriers are sound long-term investments in national security.

In the fiscal year 1996 budget we are requesting $222 million in advance procurement for the refueling overhaul of the U.S.S. *Nimitz* (CVN–68). The *Nimitz* overhaul begins in March 1998 and will be completed in 3 years. This refueling is the first of a series of scheduled nuclear carrier refuelings which will go on throughout the first years of the next century.

Carrier-Based, Fixed-Wing Aircraft

F–14

The Navy's F–14 modernization plan is a two step phased approach to arrive at a configuration that provides modern precision ground attack capability. The first step, the F–14A/B Upgrade program, incorporates airframe service life modifications, digital avionics, and survivability and interoperability modifications. The F–14A/B Upgrade program is on schedule and on cost.

The second step of our phased plan is the integration of selected precision weapons. The $1.6 billion F–14 Block I Strike program to accomplish this step was terminated for affordability reasons. The fiscal year 1996 research and development budget request of $25.4 million will be used to initiate a more affordable strike upgrade program for the F–14. We recently completed a Cost and Operational Effectiveness Analysis that evaluated options for integrating Joint Direct Attack Munitions (JDAM) and laser guided bombs. We are currently reviewing the results of this analysis.

F/A–18

The F/A–18 Strike Fighter is the cornerstone of Naval Aviation, with 44 squadrons flying from the Navy's 12 carriers and from Naval and Marine Corps Air Stations. The fiscal year 1996 procurement request includes $609.9 million for 12 F/A–18C aircraft. This is the last F/A–18 production scheduled to meet U.S. requirements until we transition to F/A–18E/F production. F/A–18E/F production is scheduled to begin in fiscal year 1997 with 12 aircraft.

Current F/A–18C/Ds have been extensively upgraded to provide a necessary warfighting capability that significantly surpasses the early model F/A–18A/B aircraft. They feature new engines, radar, mission computers, sensors, displays, and multi-source integration, enabling them to strike at night and in adverse weather with precision guided weapons. They are equally adept as fighters, as demonstrated in Desert Storm when they shot down MiGs with Sparrows and Sidewinders; they are now equipped with AMRAAM.

These increased capabilities, however, have now consumed nearly all the extra space, power, and cooling which had been provided to support growth. As a result, the larger, longer range, more capable F/A–18E/F aircraft is under development to modernize our carrier air wings. The F/A–18E/F will provide increased payload and growth capacity to accept new weapons and systems currently under development.

The Engineering and Manufacturing Development program presently is on schedule, meeting performance criteria, and is projected to be within the congressionally mandated $4.88 billion cost cap. Our fiscal year 1996 R&D budget request for this program is $845.1 million. The first F/A–18E/F is planned to fly in December 1995.

Joint Advanced Strike Technology

The Joint Advanced Strike Technology (JAST) program serves as the Department of Defense's focal point for defining future joint strike aircraft weapons systems for the Navy, Air Force, Marines and our allies. The overall fiscal year 1996 budget request for the JAST program is $331.2 million; our fiscal year 1996 Navy Department R&D budget request is $149.3 million. Presently, we believe the JAST program will lead to a joint Engineering and Manufacturing Development program in fiscal year 2000 for a family of affordable multi-mission strike aircraft systems which meet the range of the services' requirements. As directed by the Congress, ARPA's Advanced Short Takeoff/Vertical Landing effort has been fully integrated into the JAST program.

E–2C

The fiscal year 1996 procurement budget request includes $214.2 million for three E–2C Group II aircraft. The procurement of new E–2C aircraft will enable the Navy to continue to rely on the E–2C for its airborne command and control platform well into the 21st Century.

The E–2C Mission Computer Upgrade program commenced in fiscal year 1995 and will utilize commercial off-the-shelf hardware, open architecture, and a more sophisticated programming language. The Mission Computer Upgrade will enable the E–2C to fully exploit the capabilities inherent in its current sensors, correct operational software deficiencies due to limitations of the present computer, and provide the capacity for the E–2C to be fully Cooperative Engagement Capability-compatible.

EA–6B

The EA–6B aircraft is the Department of the Navy's premier airborne electronic warfare system. A major weapon system improvement program called the Advanced Capability (ADVCAP) was being developed for the EA–6B to meet the known Cold War threat which would have been fielded by the Soviets. With the end of the Cold War, the quantity and rate of introduction of these sophisticated threat systems has fallen far short of projections. Given this change in circumstances, we terminated the Cold War threat-oriented ADVCAP program.

In view of the diminished world threat, we now have time to examine newer technologies and lower cost alternatives to provide the capability enhancements needed to sustain the EA–6B's technological advantage well into the future. Our present plan first calls for an upgrade to correct all known structural problems and incorporate Global Positioning System, improved ARC–210 radios, and an upgraded AYK–14 computer system. In fiscal year 1996, the Department plans to begin development of another high priority warfighting improvement—a new transmitter to more fully cover certain lower frequency ranges. Our 1996 RDT&E budget request is for $3.3 million.

Amphibious Ships

We plan to maintain 12 Amphibious Ready Groups and lift capacity for 2.5 Marine Expeditionary Brigade equivalents. This plan carefully balances recapitalization and incorporates ongoing technological advances. Our goal of 2.5 Marine Expeditionary Brigade equivalents will be met in the near-term through an innovative combination of Active, Reserve, and Military Sealift Command assets until the LPD–17 class and the LHD–7 are delivered. The centerpiece of the 12 ARGs will remain 11 LHA/LHD large deck Amphibious Assault Ships with U.S.S. *Guam* (LPH–9) manned in a Naval Reserve Fleet status for contingency operations until LHD–7 is delivered. The plan calls for extending the service of U.S.S. *Guam* (LPH–9) until fiscal year 2007.

The Department's top amphibious ship priority is the overall modernization of our Amphibious Ready Groups by replacing the lift shortfall created by the retirement of the LPD–4 class and other aging ships with the new technology LPD–17 class.

Amphibious Transport Dock (LPD–17)

The LPD–17 class is the next generation of expeditionary warfare ship. It will replace the aging LPD–4, LSD–36, LKA–113, and LST–1179 classes. Twelve LPD–17s will replace 41 obsolete amphibious ships. The program's design "keel blocks" are warfare capability, mission flexibility, an "open architecture" that supports performance upgrade-ability, interoperability, logistics readiness, and improved survivability. The LPD–17 will have a Collective Protection System which will allow it to operate in a chemical/biological warfare environment and a vertical launch missile suite for self protection. We plan to procure the first ship in fiscal year 1998.

Amphibious Assault Ship (LHD–7)

In the future, 7 LHDs and 5 LHAs will be the centerpieces of 12 tactically flexible, deployable Amphibious Ready Groups (ARGs). These ships embark, deploy and land elements of a Marine landing force in an amphibious assault. We presently plan procurement of LHD–7 after fiscal year 2000 in order to sustain 12 Amphibious Ready Groups.

Arleigh Burke (DDG–51) Destroyer

The latest version of the *Arleigh Burke* (DDG–51) class destroyer—the Flight IIA—enhances this multi-mission surface combatant with state of the art air and self defense capabilities, increased capacity for vertical launched land attack cruise missiles, and significantly improved damage control capabilities. To respond to littoral warfighting requirements, we are also incorporating a dual helicopter hangar and organic Lamps MKIII capability. The first DDG–51 Flight IIA ship contract was awarded in fiscal year 1994.

We have to procure an average of 2.7 DDG–51s per year over the Future Years Defense Program to support recapitalization of the surface combatant force. This average number will meet the minimum force levels required by current defense planning and sustain the surface combatant industrial base.

The fiscal year 1996 procurement budget request includes $2.2 billion for two DDG–51 class destroyers. A DDG–51 Acquisition Strategy Study is currently in progress to examine various acquisition strategies.

21st Century Surface Combatant (SC–21)

In January 1995, the Defense Acquisition Board approved a plan to begin conceptual studies for surface combatants to be delivered in 2008. We will look carefully at a broad range of alternatives, including the possibility of creating a new family of ships. These ships will have the ability to detect minefields and defend against torpedo attack. We will evaluate ship concepts that meet open ocean and littoral warfare requirements, and use of modeling and simulation to reduce design costs. We have invited the other services to participate to ensure that we meet joint warfare requirements. The fiscal year 1996 R&D budget request is $6.7 million.

Ship Self-Defense

The Navy's Ship Self-Defense program is part of the effort to give ships the ability to operate safely in the littorals and defend themselves against attacks by aircraft and anti-ship cruise missiles. The program adds sensor, command/control, engagement and electronic warfare systems and upgrades by ship class, while exploiting capabilities of those systems already in the fleet.

The heart of the Ship Self-Defense effort is the Ship Self-Defense System MK–1 which will implement incremental integration of these systems and provide increasing levels of quick-response and multi-threat engagement capability. Ship Self-Defense System MK–1 will be highly automated yet still allow ships' commanding officers to maintain positive control over weapons release. It is projected to reduce reaction time to one-fifth that of non-automated ships while providing significant increases in the ability to gain and maintain target tracking and conduct coordinated engagements. The system is designed to be able to incorporate changes in technology. Rapid fielding and cost reduction have been made possible through commercial and non-developmental equipment, leveraging previous software developments and use of modeling and simulation. The fiscal year 1996 R&D budget request includes $223.3 million for Ship Self Defense.

Submarines

We have specifically designed capabilities into the New Attack Submarine to improve operations in littoral waters. In response to the increasing mine threat, *Seawolf* and the New Attack submarine are designed to be electromagnetically silent. The New Attack Submarine will introduce a revolutionary mine hunting sonar and includes dedicated external stowage space for Special Operations Forces equipment, the ability to host both the Dry Deck Shelter and the Advanced Seal Delivery System, and a 9-man Lockout Trunk designed for Special Operations missions.

The New Attack Submarine's torpedo room is designed for maximum flexibility—it can be reconfigured to accommodate a mix of weapons, special warfare forces and their equipment, and Unmanned Underwater Vehicles with associated personnel and equipment.

The New Attack Submarine design contains advanced electronics surveillance equipment, improved imaging capability including night vision, and improved performance in "reduced visibility conditions." The New Attack Submarine will be equipped with a vertical launch system that will support a higher initial salvo rate for surgical strike missions. The wide aperture array sonar installed in both boats provides the optimum sensor for prosecuting submarines in the shallow waters. *Seawolf* and the New Attack Submarine will also have an improved hovering capability allowing it to remain at depth more efficiently. Both submarines' Secondary Propulsion Motor will support improved slow speed operations. These specific attributes, along with the New Attack Submarine's revolutionary advances in real-time communication and data transfer, provide a significantly improved littoral warfare capability.

Cooperative Engagement Capability

Cooperative Engagement Capability (CEC) facilitates the exchange of tactical information between ships, aircraft, and missile batteries ashore. Distributed information provides real time onboard cueing for fire control solutions to counter cruise and theater ballistic missile threats. In 1994, CEC-configured ships and aircraft conducted successful at-sea developmental tests which included the first successful missile engagement of a target exclusively using remote tracking data. The fiscal year 1996 budget request includes $180.0 million for R&D and $2.5 million for O&M,N. CEC will achieve Initial Operational Capability using Advanced and Engineering Development Models in late fiscal year 1996.

Theater Ballistic Missile Defenses

There is broad concurrence that weapons of mass destruction and the tactical ballistic missiles which carry them will continue to proliferate. Scud-type missiles threaten our ability to establish a lodgement ashore, particularly early in a crisis, and put soldiers, marines and airmen at risk. We have capitalized on our $48 billion investment in Aegis cruisers and destroyers and have developed the capability to counter many of these threats. Navy area and theater ballistic missile defense represents a unique asset that is mobile, sovereign, and able to arrive on station ready for combat. Unlike land-based systems, Navy Theater Ballistic Missile Defense does not rely on scarce strategic lift and can be introduced into a theater without the political concerns and diplomatic clearances associated with deployment of land-based systems. It is the most effective defense against the ballistic missile threat.

Mine Countermeasures Forces

The Department is aggressively pursuing innovative solutions to recognized deficiencies in our ability to detect and clear mines.

We are developing a new approach to mine countermeasures to complement *"Operational Maneuver From The Sea."* Our evolving approach includes emphasizing mine detection and mine avoidance while developing a true in-stride breaching capability. This approach will allow us to take advantage of the inherent speed, flexibility, and mobility offered by the new systems.

Equipment requirements are being determined through a series of joint exercises and studies and ongoing participation in the Joint Countermine Advanced Concept Technology Demonstration. Our priority in developing equipment requirements has shifted from large platforms solely dedicated to deliberate breaching to improvements in detection, location, and avoidance.

Last year, the 14th and last ship of the MCM–1 class was commissioned. In November 1994, we awarded the contract to convert the U.S.S. *Inchon* to a mine countermeasures command and control support ship (MCS–12) to address a major tactical shortfall. This ship will provide command and control, an air mine countermeasures operating platform, and support services and maintenance facilities for air and surface mine countermeasures forces.

The MHC–51 class coastal minehunters were designed specifically to find and destroy mines. This is a 12-ship program divided between Intermarine USA of Savannah, Georgia (8 ships) and Avondale Industries of New Orleans, Louisiana (4 ships). MHC–52 was delivered in fiscal year 1994, and we expect that MHC–55 and MHC–53 will be delivered in fiscal year 1995.

In shallow-water mine countermeasures, we have a comprehensive spectrum of programs under development that will provide the critical enabling function of clearing the way from the sea. Submarines will be able to conduct clandestine reconnaissance with unmanned underwater vehicles. A Near-Term Mine Reconnaissance System (NMRS), designed to covertly confirm or deny the presence of mines in waters as shallow as 10 feet, is a year into development. We expect this submarine launched and retrieved Unmanned Underwater Vehicle (UUV) to be operational in early 1997. Surface combatants and amphibious ships will employ organic off-board sensors in locating mine fields, and breaching and sweeping the shallow water and surf zones.

Ashore, one of our greatest concerns remains our ability to quickly and reliably locate many of the different landmines available today. To correct deficiencies in this area, we have recently begun fielding the AN/PSS–12 hand held mine detector and expect full fielding before the end of this year. We are also developing Coastal Reconnaissance and Battlefield Analysis, a multi-spectral sensor package mounted in an Unmanned Aerial Vehicle, designed to detect mines and obstacles. In addition, we are evaluating an Army program, Airborne Stand-Off Minefield Detection System.

In the area of minefield breaching/clearance, we are working jointly with the Army on the following systems:

— Stand-Off Minefield Breacher, an explosive net array designed to create a lane through a minefield with an expected fielding of fiscal year 2002;

— Anti-Personnel Obstacle Breaching System, a man-packed linear explosive charge designed to reduce light obstacles such as barbed wire and anti-personnel mines with a projected fielding of fiscal year 1998; and

— the Combat Breacher Vehicle, an armored vehicle with a plow designed to push mines out of its path with a projected fielding of fiscal year 2000-01.

Advanced Countermine Technology

Mines give an enemy the potential to neutralize our forces and hold us at risk at little cost and risk to his own assets. Because of the impact of mines on the potential of U.S. forces to prosecute a campaign, we have instituted a joint Advanced Concept Technology Demonstration that ties together individually developed capabilities. The principal goal of the demonstration is to show that these countermine capabilities can be seamlessly integrated within a joint C^4I architecture.

POWER PROJECTION

Naval power projection is the ability to project intense, precise offensive power ashore at the time and location of the commander's choosing. Three types of power projection tools are available: cruise missiles and naval gunfire; naval strike operations; and amphibious operations. These tools may be combined to create an overwhelming onslaught, or they may judiciously limited to appropriately counter opposing forces. The most decisive tool of naval power projection is an amphibious assault—which can be used to culminate a campaign or as to enhance the introduction of heavier follow-on forces. Specific programs oriented toward littoral power projection are as follows:

Advanced Amphibious Assault Vehicle

The Advanced Amphibious Assault Vehicle is the Marine Corps top priority ground combat system. It provides the amphibious task force with the speed, agility, range, protection, and firepower necessary to support the *"Forward . . . From the Sea"* strategy and the *"Operational Maneuver From The Sea"* concept. The Advanced Amphibious Assault Vehicle will carry 18 combat-equipped marines at three times the speed and twice the armored protection of older units. This platform will greatly expand surface mobility and increase ship survivability by launching beyond the horizon. In March 1995, the Defense Acquisition Board approved entering the Demonstration and Validation Phase. Our fiscal year 1996 budget request is $32.4 million for R&D.

V–22 Osprey

We must have the capability to project forces deep inland from over the horizon at sea. The aging CH–46 medium lift helicopters simply do not have the capability, survivability, or potential for upgrade to carry out these missions. Replacement of the CH–46 is the Department's highest aviation priority for the Marine Corps.

The continued development and acquisition of the V–22 tiltrotor aircraft will meet this need. The V–22 development effort continues in fiscal year 1996 with $762.5 million in RDT&E funding requested. An additional $48.0 million is requested for Low Rate Initial Procurement long lead funding in fiscal year 1996. We plan to begin acquisition of the V–22 in fiscal year 1997.

AV–8B

In fiscal year 1994 we began converting 72 day attack AV–8B aircraft to the night attack/radar configuration. Major components of the day attack aircraft will be reused to reduce costs. Remanufactured AV–8B aircraft will provide the Marine Corps with an effective day/night close air support capability and meet affordability concerns. The AV–8B Remanufacture Program procurement budget request is $169.7 million for four aircraft in fiscal year 1996.

AH–1W

The versatility of the AH–1W attack helicopter matches its many missions of escort and protection of troop-carrying assault helicopters, landing zone preparation and fire suppression, anti-armor and anti-helicopter defense, and command and control of supporting arms.

Since the AH–1W is scheduled to remain in service until 2020, we plan to modernize this important aircraft by digitizing the cockpit, reducing pilot workload and improving battlefield situational awareness, adding a four-bladed rotor, and increasing weapons capacity.

CH–46 Upgrade

The CH–46 upgrade consists of two programs. The first is the Dynamic Component Upgrade, the second is the Service Life Assessment Program. The Dynamic Component Upgrade is a 4 year funded safety of flight program that replaces the dynamic components in the Flight Control System, Drive Train and Rotor System. This upgrade does not enhance the performance of the aircraft, but returns the performance of the CH–46 to its original characteristics. The Service Life Assessment Program is an assessment of the airframe and aircraft components that will define the maintenance required for the CH–46 to meet mission requirements until it is replaced by the V–22.

Naval Surface Fire Support

Naval Surface Fire Support (NSFS) fulfills a requirement for an alternative to artillery fire during the critical initial phases of the amphibious operation and reinforces our organic artillery once ashore. NSFS must be capable of supporting operations from well beyond 25 nautical miles offshore.

The decommissioning of the battleships means that the only fire support available is on cruisers and destroyers equipped with the MK–45 5 inch gun. A combination of improved shipboard guns, missiles, and tactical aviation is needed to fully meet future Naval Surface Fire Support requirements to provide responsive, around-the-clock, all weather supporting arms fire in direct support of combat forces ashore.

To take full advantage of the investment in shipboard gun systems, the Navy-Marine Corps team's near term strategy is to develop modifications to the MK–45 5 inch gun to increase range and lethality and use guided projectiles. We intend to field this capability prior to fiscal year 2001. The fiscal year 1996 R&D budget request includes $12.1 million to support the program.

In the outyears, a more robust Naval Surface Fire Support capability will be fielded to include a Naval Surface Fire Support Missile, integrated mission planning and targeting, and the possible development of a new, larger naval gun for employment in the 21st Century Surface Combatant.

Joint Weapons

The value of precision guided weapons in anticipated threat scenarios is well-substantiated. Standoff capability is important because it lessens risks to our sailors and marines. The Department continues to participate in the development of the Joint Direct Attack Munition (JDAM), Joint Standoff Weapon (JSOW) and Joint AIM–9X Short Range Air-to-Air Missile. The fiscal year 1996 RDT&E budget request contains $37.8 million for JDAM, $81.8 million for JSOW, and $29.7 million for AIM–9X development.

Tomahawk

Tomahawk provides the core strike capability for our surface combatants and attack submarines. The fiscal year 1996 RDT&E budget request is $141.4 million for the Tomahawk Baseline Improvement Program (TBIP) Engineering and Manufacturing Development effort. The TBIP program will improve Tomahawk accuracy and reliability, and reduce collateral damage. Fiscal year 1996 procurement of the more capable Tomahawk Block III TLAM–C/D missile is budgeted for 164 missiles at $161.7 million.

SLAM

The Standoff Land Attack Missile-Expanded Response (SLAM–ER) program will improve performance, employability, strike lethality and range. Existing SLAM inventories will be upgraded through a retrofit program. The fiscal year 1996 SLAM program procurement request is for 30 missiles at $46.4 million.

Expeditionary Land Combat Systems

In fiscal year 1995, Congress appropriated $418.2 million for Marine Corps procurement programs and $135.3 million under the new Navy/Marine Corps Ammunition Appropriation. The fiscal year 1996 procurement budget request of $474.1 million, including ammunition, will permit us to focus on only our most essential modernization and sustainability requirements. The fiscal year 1996 request also includes $204.1 million for Marine Corps ground research, development, test and evaluation programs of a lightweight howitzer, vehicle remanufacture and Marine Air Ground Task Force C^{4}I.

LW155 Howitzer

Artillery modernization is critical to the Marine Corps. The fiscal year 1996 R&D budget request includes $10.9 million for the Lightweight 155 millimeter towed howitzer to replace the M–198 howitzer, which is currently experiencing costly, dangerous metal fatigue cracks. We presently plan to sign a Joint Operational Requirement Document with the Army in fiscal year 1995.

Medium Tactical Vehicle Remanufacture

The fiscal year 1996 R&D budget request is $2.4 million for the Medium Tactical Vehicle Remanufacture program. This funds engineering development of prototypes to test approaches for remanufacture of the current fleet of 5-ton wheeled vehicles which are completing their service life earlier than expected. Based on the success of our demonstration program, remanufacture is the most cost effective fleet strategy. Medium Tactical Vehicle Replacement provides a multi-purpose vehicle to accomplish the wide range of logistical missions required of the Marine Corps medium tactical vehicles.

Marine Air Ground Task Force C^{4}I

The Marine Corps continues the procurement of interoperable Communication, Command and Control, Computers and Intelligence (C^{4}I) assets to ensure that we have the essential capability to control forces on the modern battlefield. In fiscal year 1996 we will continue to modernize existing equipment and procure new systems which stress joint service and combined forces interoperability.

FORCE SUSTAINMENT

Force sustainment means that sea-based forces can remain on station as long as required, allowing the commander to focus on the mission and rapidly shift his resources to exploit opportunities. Force sustainment encompasses a comprehensive and responsive logistics support system which includes air support, prepositioning, strategic sealift, and replenishment ships.

Sealift Ships

Sealift ships provide follow-on warfighting and sustainment capability through ports after combatant forces have secured the area. The DOD Mobility Requirements Study of January 1992 determined that we need an additional 5 million square feet of roll-on/roll-off capacity to support two Major Regional Conflicts.

We will fulfill this requirement by acquiring 19 ships. To date, contracts have been awarded for the conversion of five ships and the new construction of six prepositioning/surge ships. Our budget request includes funding to exercise options for two ships each in fiscal years 1996 and 1997. The fiscal year 1996 budget request includes $974.2 million for the construction, acquisition, conversion and related R&D for ships which will be utilized for prepositioning, surge and Ready Reserve Force requirements.

The current acquisition plan reflected in the Future Years Defense Program calls for more ships after fiscal year 1997. Although the sealift conversion contracts are experiencing delays of about 11 months, the ships are expected to be delivered in time to meet Department of the Army requirements. Sealift new construction ships are on schedule. All sealift ships are procured via the National Defense Sealift Fund which was created to centrally manage all Department of Defense sealift financial resources.

Maritime Prepositioning Force Enhancement

Our three-squadron Maritime Prepositioning Force has proven to be highly effective in an era during which our overseas bases have been substantially reduced. In fiscal year 1995, Congress appropriated $110 million for an additional ship which will help to meet the requirement for enhancement to our current capability by providing the capacity for an Expeditionary Airfield, a Fleet Hospital, a Navy Construction Battalion, and augmentation of a shortfall in lift for general equipment in support of operations in the littorals into the 21st Century.

Combat Logistics Forces

The Combat Logistics Force consists of station ships and shuttle ships. These vessels give our naval forces the unique non-intrusive staying power to operate in the littorals regardless of the international situation.

We currently have an inventory of eight station ships. Four ships are the new AOE–6 class contracted to National Steel and Shipbuilding in San Diego, California. To date, two AOE–6 class ships have been delivered. The third ship is scheduled for delivery this summer, and the fourth in fiscal year 1998. Our long range plan calls for contracting for a ninth ship at the beginning of the next decade. Later this decade we also plan to begin a service life extension program for the four AOE–1 class ships.

Our shuttle oilers, ammunition and stores ships are sufficient for the near future. We have requested funds for the overhaul, conversion and transfer to civilian manning of two store ships (AFSs) and two ammunition ships (AEs) in fiscal year 1996, and four AEs in fiscal year 1997. This is a continuation of the program begun in the mid-1970s which resulted in the transfer of most of our shuttle ships to Military Sealift Command. The remaining two AEs are planned for conversion after fiscal year 1997.

We have determined that the most cost-effective way to maintain our Combat Logistics Force ammunition and combat store shuttle ships is to retain the AEs and AFSs for 10 years beyond their nominal 35 year service lives. This delays the need for replacement ships until after 2005. To replace these ships we will soon begin concept exploration studies and a Cost and Operational Effectiveness Analysis (COEA) for a new construction shuttle ship—the ADC(X)—with procurement planned to begin in fiscal year 2000.

CONCLUSION

In summary, we believe that the Department of the Navy's budget request for fiscal year 1996 supports a highly capable, relevant and ready Navy Marine Corps team for today and plans prudent investments for the future. In these difficult and challenging times, we are committed to a constant review of our performance to ensure we are doing the right things in the right way. We continually assess the political, social, economic, technological and military factors that bear upon our ability to accomplish our mission. We believe we are at the *right size* to meet the challenges foreseen in the world of our future—a world of increasing complexity which will demand greater, rather than lesser, interaction if our Nation is to thrive. Further force structure reductions may degrade either our ability to perform assigned missions or the quality of life of our young sailors and marines. We believe our *recapitalization* plan is the right approach under the circumstances. It should produce an effective set of equipment at a cost reasonable to the American taxpayer. We believe we are ready today for tomorrow's challenge, and that we can sustain that readiness for the near term with an acceptable degree of risk. We appreciate this committee's interest in and support of our ability to effectively represent our great Nation . . . Forward, from the Sea.

Senator COHEN. Admiral Lopez.

STATEMENT OF VICE ADM. T. JOSEPH LOPEZ, USN, DEPUTY CHIEF OF NAVAL OPERATIONS RESOURCES, WARFARE REQUIREMENTS AND ASSESSMENT

Admiral LOPEZ. Mr. Chairman, Senator Kennedy, thank you for inviting me here today.

I certainly agree with Secretary Slatkin on her assessment on the importance of operating in the littorals and our capabilities that we require.

As the Navy's requirements officer, I see clearly the need to develop those forces and capabilities to safely operate in the littoral regions as we go forward from the sea. And that is despite an ever-changing threat and geo-political environment.

Our capabilities and our ability to quickly react to crises underscores the value of the Navy/Marine Corps team.

And last, we are fortunate to have a force to get the job done with the finest sailors and marines there are in the world. I thank you for the opportunity to address the committee, and I am ready to answer your questions.

Senator COHEN. Thank you, Admiral. General Wilhelm.

STATEMENT OF LT. GEN. CHARLES E. WILHELM, USMC, COMMANDING GENERAL, MARINE CORPS COMBAT DEVELOPMENT COMMAND

General WILHELM. Mr. Chairman, Senator Kennedy, Members of the subcommittee, good morning. I appreciate this opportunity to accompany Ms. Slatkin and to discuss with you the Department of the Navy's concepts, programs and capabilities for littoral warfare.

In her oral and written statements, Ms. Slatkin has described the challenges and opportunities that are resident in the world's coastal regions.

She has also discussed in considerable detail the current and planned capabilities that will allow the Navy and Marine Corps team to effectively operate in these regions both now and on out into the 21st Century.

Sir, as you know, for nearly 220 years now, the primary operating domain for Marines have been those places around the world where the oceans touch the shores.

As a result, we have a fair amount of experience in littoral operations, and we tend to think about, talk about, write about and on occasion to worry about operations in those regions a great deal.

With that in mind, I would like to very briefly give you a Marine Corps perspective on our strategy and the current and planned future capabilities of our Naval Expeditionary Forces.

First, I believe that ". . . Forward from the Sea" is the right strategy at the right time for the Navy and the Marine Corps.

We just look at what has happened out on the worldscape since, say, 1990 as a benchmark, we look at places like Haiti, Somalia, the Philippines, even coastal Florida, and we see littoral regions that are in a state of chaos.

When we couple that with the demographic trends that we get from the United Nations and others we do not see any change out into the future. We see these to be the most likely areas of employment for our Naval Expeditionary Forces.

The challenges are complex. Some of the crises, of course, are created by man, others by nature. In some circumstances, both man and nature have conspired against the littorals.

Again we see broad opportunities for the employment of our forces in those regions. For all of those reasons, we are convinced that well into the 21st Century, the littoral regions will be job number one for Navy and Marine Corps forces.

Our programs reflect that emphasis and our desire to strike a balance between three things. First, we are looking for a quantum increase in capability.

Here, the V–22 Osprey, with its speed in the 250 knot range, its 200 nautical mile combat radius, its ability to carry 24 combat-loaded marines, and its ability to self-deploy for ranges of up to 2,100 nautical miles with a single aerial refueling, to my way of thinking, really epitomizes not a tomorrow capability, but a day after tomorrow capability, and one, which with your help, we have been able to pursue and which is almost within our grasp right now.

The second item in our programmatic approach is affordability. Wherever possible, we look for the most cost-effective ways to do business. Here I would offer as an example our fleet of medium tactical vehicles. These are 7,700-plus trucks; not very dramatic but very necessary if we are going to transport our direct and general support artillery around the battlefield, and if we are going to conduct the day-to-day business of sustaining our force.

We saw basically two ways to go. One, we could buy a new truck at a cost of about $138,000, or two, we could salvage enduring components from the existing truck and remanufacture it, getting essentially the same capabilities for a cost of $97,000. We took option B, and that results in a 30-percent savings.

The third characteristic that we are looking for in our new programs is versatility. Here the system that comes to mind is one that Ms. Slatkin has already mentioned, the Advanced Amphibious Assault Vehicle.

I guess if I was talking to a baseball fan, the Bo Sox, Senator Kennedy, and I were asked to describe this vehicle, I might categorize it as a switch hitting utility infielder.

By that, I mean, here we have a vehicle that can bring combat troops from over the horizon at water speeds in excess of 20 knots and once ashore can provide a level of protected mobility that is equal to or greater than our main battle tank.

The mission is lifesaving, as opposed to a lethal mission. We bring it ashore in a country with a blighted infrastructure, like a Somalia or like a Haiti, where we do not have bridges, where we have obstacles like rivers, like marshes, like lakes, things which are impediments for conventional vehicles are nothing more than an avenue of approach for a AAAV.

The troop compartment in the back that carries 17 to 18 combat troops can just as easily carry tons of foodstuffs, medical supplies or blankets, whatever the occasion might demand.

This is the kind of versatility, that multiple letterman capability, that we are looking for in our new systems.

Sir, I would tell you that at this moment our concern is really not so much our programs themselves, but the pace at which we will actually realize these new capabilities.

Though I think we have plans on the books to modernize the Fleet Marine Forces that are sensible, they are sound and affordable, for the most part, we will not deliver these new vehicles and new aircraft until after the turn of the century.

We think it imperative that we at minimum retain these programs on their current schedules, and whenever and if ever possible, that we accelerate them.

Sir, we are also aware that without the help of the Congress, very few of these programs would have come to pass. We are very grateful for your support, and I want to tell you this morning that we are just as committed today as we have been in the past to providing the Congress and the American people the same high return on each defense dollar invested in us that we have in the past.

So thank you very much, and I will look forward to your questions.

Senator COHEN. Thank you very much, General Wilhelm.

I read in the Defense Daily that you were recommending that we go from $345 million a year to $1 billion on its annual weapons program. Is that correct?

General WILHELM. Yes, sir.

Senator COHEN. Secretary Slatkin, is that something that you would recommend in terms of increasing the procurement from $345 million to $1 billion?

Ms. SLATKIN. Senator, we are in the process, as you know, of building a program for the out-years. That is what we are in the process of doing right now.

We are taking a look at what level we ought to fund Marine Corps programs, what level we ought to fund Navy programs, as well.

We have not yet made those judgments, because the analysis is still under way. So I would say it is premature to say that at this time.

Senator COHEN. I will pursue that a little bit in a moment.

Ms. SLATKIN. Yes, sir.

Senator COHEN. But one piece of unfinished business. The last time we had a meeting, we discussed the DDG–51 acquisition study.

Ms. SLATKIN. Yes, sir.

Senator COHEN. And I am told that you might be in a position to give us an update on that.

Ms. SLATKIN. The last time I was here in front of the committee, you had asked about the status of the study. I had a meeting with the independent study group and reviewed the interim results. I would be happy to share them with you.

The results are pretty straightforward, as you might expect. I believe it is clear, and we would all agree, that there is a real need and a real requirement to maintain two shipyards for a host of reasons for building complex warships, for building our DDG program.

So we are all comfortable that the path that we are on in the near term is the path that we should follow over the long term.

This independent study group did raise one interesting point, one that is relevant in many ways. They said that once you give up the opportunity to compete, by reducing down to one yard, once you give up that opportunity, you could lose some potential cost savings on these programs.

The course that we are embarked on at this point, Senator, is to look at how we might structure our acquisition with both shipbuilders to make sure that we take best advantage and get cost savings as quickly as possible in the DDG program.

I expect a conclusion of the study this summer, and the conclusion would not only be to endorse our shipyard strategy but give us some ideas and some suggestions on how we might look at additional cost reduction efforts with both of the shipyards. It is a very positive effort, I believe, very useful for the Navy Department.

In particular, I think the way to look at how we might reduce future costs on DDGs will be very helpful. I would be happy to share those results with you, because there may be things that we need, changes in the law or things that we could use from you. I would be happy to let the Congress know.

Senator COHEN. Basically, you want to maintain two shipyards. There is a conclusion that having only one shipyard will ultimately add costs to the individual ships resulting not in long-term savings but in long-term increases.

You are looking for ways to maintain the two shipyards and still save costs.

Ms. SLATKIN. We are examining ways to save the government money, that is correct, Mr. Chairman.

Senator COHEN. So we will try to work very closely with your office to produce that.

Ms. SLATKIN. That is correct.

Senator COHEN. Admiral Lopez, tell me how we got from ". . . From the Sea" to actually "Forward . . . From the Sea." What constituted that strategic concept change?

Admiral LOPEZ. I think when you look at the fact that 2 years have evolved since we had written that—the old days were perhaps way back in 1991—we had a Soviet Union, and we did not really know what to expect since we had been doing what we had been doing for 50 years. So we wrote ". . . From the Sea" in concert with the Marines, and that really gave us our impetus to focus on littoral warfare. We wanted to embellish that.

If you read "Forward . . . From the Sea," I think you would find the word "Forward" is important in the sense of forward engagement and how that forward engagement transitions from crisis or peace to crisis to war.

That was the primary emphasis, to bring in forward presence, forward engagement, also some emphasis on how you get there and the logistics and the importance of that.

So it really was no change in the basic thesis of ". . . From the Sea" but rather, I would say, an embellishment of ". . . From the Sea" and thus "Forward."

Senator COHEN. If I could ask you and General Wilhelm, what are the two or three top requirements that this doctrine will require. If you had to lay out what is it you need, the top three or four items, in the Navy and the Marine Corps in order to go from a strategic concept to operational reality, what would you list as those three or four top items?

Admiral LOPEZ. The first thing that comes to mind is something that Secretary Slatkin mentioned in her address, which is Lower Tier.

I frankly do not think you are going to get ashore in any capacity unless you are able to engage and destroy ballistic missiles before they either harm your troops or eliminate the logistics train.

Frankly, I do not think in the near term we could do a Desert Storm again without being able to do Lower Tier.

Second, Naval fire support ashore is extremely important. I harken to your question on the battleships, and I think we have an excellent program.

Senator COHEN. You know, we have been talking about that for at least 10 years.

Admiral LOPEZ. Yes, sir. The CNO held a CNO Executive Panel meeting in December 1994, during which we sat down with the Marines and decided what we were going to do and what we had to do in order to make sure we had adequate support ashore.

That is when we determined that we would in fact upgrade our 5-inch gun in the near term, build a future gun that would give us the depth of fire power that we needed out to about 50 miles or more.

Then, subsequently—and Ms. Slatkin also alluded to this in her address, SC–21. I can talk a bit about that later, if you like. The SC–21 is a power projection ship, literally an arsenal that would be able to shoot Tomahawks, our own ballistic missiles, such as ATACMS, Harpoons, or SLAM and standard missiles.

Third, I think the most important aspect would be to upgrade command and control. If you cannot communicate, you cannot fight.

We simply have to have seamless command and control as the Navy and the Marine Corps execute littoral warfare. We are making an investment in that as well.

With that, I will let General——

Senator COHEN. Before you do that, when you talked about going back to the 5-inch gun that you are now looking at in terms of fire support, my understanding was you were looking for an evolutionary concept from a 5-inch gun to 155 millimeter mount. Now you are back to the 5-inch gun.

What is going on?

Admiral LOPEZ. We need something in the near term, sir, and we want to buy smart and be able to take care of our fire support needs and the Marines' fire support needs, and to upgrade the 5-inch gun, not only with further range, with rocket propelled and a change in the barrel, but also to put GPS into the projectile to give us a very tight center of probability and basically increased accuracy out to about the 50-mile range.

We will be within that range, without talking about what the specific range will be for the gun.

We are very comfortable with that, but we need to do something beyond that that includes the 155 that you just discussed and also the SC–21 power projection ship, which I discussed earlier.

Senator COHEN. All right. General Wilhelm, would you list your priorities?

General WILHELM. Yes, sir. I will see if I can fill in on the back end on the landing force side now. Sir, of course, "Forward . . . From the Sea" is the new Naval strategy.

As a companion piece to that, we in the Marine Corps have developed an operational concept that we call "Operational Maneuver . . . From the Sea."

The centerpiece of that operational concept is the ability to initiate landings onto a hostile shore from over the horizon, beyond visual targeting range.

To do that effectively, we have several requirements which conveniently break down into two categories. Since we organize into air/ground teams, I can discuss them in that way.

Our top priority on the ground side is the Advanced Assault Amphibious Vehicle, which I discussed in my opening remarks.

We need a new lightweight howitzer, a light-weight 155, something in the 9,000 pound gross weight range to replace our current M–198 155-millimeter howitzer, which has several problems.

One, it is 42 feet long and weighs almost 14 tons and can only be transported by the CH–53E helicopter. We need a gun that can be transported by both the V–22 Osprey and the CH–53. The lightweight 155 will make it on both counts.

The third requirement I had also previously mentioned is an upgrade and modernization of our medium tactical vehicle fleet. That is imperative to conduct operations from the ship and then inland once we arrive on the shore.

The fourth piece is improved command/control communications and intelligence support for our Marine air/ground task forces.

As a subset of that, we need to expand those pieces of our command and control architecture which will improve our ability to either operate as part of a joint force or in fact to serve as the command element of the joint task force ashore. That is all the ground side.

On the aviation side, our number one priority, sir, as you and Senator Kennedy well know, is the V–22. And as I mentioned, thanks to your help, the end zone appears to be in sight on that.

Priority number two, as I see it, would be the remanufacture of our AV–8B Harrier. The principal problem that we have right now, sir, is that about 72 of those aircraft are really a day attack only version.

That makes us a 12 to 16 hour per day fighting force. That is not good enough. Darkness should be an ally of technologically advanced forces like ours.

The AV–8B remanufacture will put both a laser and a radar on the aircraft. It will essentially restart the service life of the airplane, retaining the wing, the vertical stabilizer, the landing gear, and some other critical components.

We will save about 23 percent over the cost of a new airplane. But more important than the newness is the significant upgrade in capabilities, a 24-hour-a-day airplane.

The third aviation requirement that I would call out would be some badly needed upgrades on our AH–1W Cobra. We need to make that helo night capable, and we have been working on a night targeting system with the Israelis since the mid-eighties. And, in fact, we have fielded some of those airplanes in the FMF right now.

We also have a mid-life upgrade program for the Cobra, which will include an integrated weapons system, which will enable us to operate the weapons system equally well from the front seat or the back seat.

Right now, the guy in the back seat is carrying too much of the load, and we cannot really effectively exploit all the capabilities that are in the cockpit, particularly when we get the night targeting system on board.

The third phase for the Cobra would be to put a new engine and a four-bladed rotor system on it, which will, for all practical purposes, double the capabilities of the aircraft, carry about twice as much ordnance and increase its on-station time.

The fourth requirement is to complete the buy of the CH–53E if we are able to work that out. Right now, sir, about the only place where the Active component does not mirror our Reserve component on the aviation side is in heavy lift.

Our reserves still fly the old CH–53D, which is really a Vietnam-vintage aircraft, and we need to get them up into the three engine, legitimate heavy lift helo, the CH–53E.

So those four programs on the ground side, the other four I mentioned on the aviation side, sir, will make us very solvent.

Senator COHEN. One further question: Ship to shore, fire support, MLRS, do you want to comment on that?

General WILHELM. Yes, sir. I would be glad to.

Sir, as Admiral Lopez has mentioned, the Navy and the Marine Corps have been working hand in glove on the naval surface fire support issue. We have recently redefined the requirement in "Operational Maneuver From the Sea," which I just mentioned.

We have identified new threshold and objective ranges for naval surface fire support, which, during the initial phases of a landing operation, would ensure that the naval surface fire support from ships would provide equal coverage at the threshold level to what our own organic artillery could provide ashore.

Then, the objective range, where we would like to get, would also include the range of the longest shooting opposing artillery. We use about 40 kilometers for that right now. That would give us adequate counter battery coverage as well.

I am a big fan, sir, of fire support at sea. One of the things I have had my troops working on is what I call the corollary of ". . . From the Sea," which is ". . . To the Sea." There are three things I would like to see go back toward ships.

One is surface fire support. Two is logistics and sustainment, and three is command and control. I think all three of those capabilities create targetable nodes ashore that I would like to avoid. So I am a big fan of surface fire support.

I think ultimately the answer lies in a combination of probably guns, missiles—I would like to take a close look at rockets for high density saturation fire support—and of course tactical aviation.

Senator COHEN. Thank you very much, General. My time has expired. Senator Kennedy.

Senator KENNEDY. Thank you. Is that all, General? Is that all that you are looking for? [Laughter.]

General WILHELM. Sir, if I could get all that, I would really be happy.

Senator KENNEDY. Very good presentation—and helpful to the committee.

Let me ask you on the COEA report, Madame Secretary, we have, as suggested by the Chair, over a long period of time been looking for the position of the Navy on the fire support investment. And that report evidently had been developed, made some recommendations.

What is the status? As I understand, the conclusion of the Navy, after examination of the report, have followed a different direction.

Ms. SLATKIN. Senator, the supplementary analysis to the Cost and Operational Effectiveness Analysis was completed yesterday. I have not yet received the briefing myself. My understanding is the work was completed yesterday. So I am not aware of the final results of this analysis yet, but I should be by next week.

Senator KENNEDY. Well, we would very much appreciate your response and reaction, because we had followed this for some period of time. And I think there is at least some sense that there was some reluctance to move ahead with that study.

And I think we are interested in the reaction of the Navy—what weight you are going to give and the reasons for that. And I will work out with the Chair what the appropriate way of trying to better understand where you are going with that.

Ms. SLATKIN. We would be happy to make the analysis available to the committee, if you would like.

Senator KENNEDY. Fine.

[The information follows:]

The supplementary analysis will be provided when the published report is available.

DEPARTMENT OF THE NAVY,
OFFICE OF THE ASSISTANT SECRETARY,
RESEARCH, DEVELOPMENT AND ACQUISITION,
Washington, DC.

Hon. EDWARD M. KENNEDY,
Ranking Minority Member,
Subcommittee on Seapower,
Committee on Armed Services,
U.S. Senate,
Washington, DC.

DEAR SENATOR KENNEDY: During the Seapower Subcommittee hearing of May 9, 1995, a request was made to provide a copy of the Naval Surface Fire Support Cost and Operational Effectiveness Analysis to the committee.

Enclosed is a copy of the final of the Cost and Operational Effectiveness Analysis Report. This report has not yet been approved by the appropriate authorities within the Department of the Navy.

I trust this report will be beneficial to you. A similar letter has been sent to the Chairman and ranking minority members of the Congressional Defense Committees as well as Senator Cohen, Chairman of the Seapower Subcommittee.

As always, if I can be of any further assistance, please let me know.

Sincerely,

W.C. Bowes,
Vice Admiral, U.S. Navy,
Principal Deputy.

Ms. Slatkin. As Admiral Lopez said, the CNO has put an increased emphasis on this area. I would be happy to provide the committee with the results of the complete analysis.

Senator Kennedy. As we are moving toward the Navy's recommendation, and to come back to the matter that the Chair mentioned with regard to the battleship, can you tell us what you are thinking in terms of the implementation of the COEA in relationship to the battleship issue?

They are not completely, directly related, but they are not unrelated either. And I am just wondering what your current thinking is on that issue.

Ms. Slatkin. I would be happy to, and then if you do not mind, I would like to ask Admiral Lopez to provide any additional remarks.

As I said during my opening statement, the Secretary of the Navy, the CNO and the Commandant decided to retire the battleships for a number of reasons. One reason was the lack of precision in terms of the fire provided by 16-inch guns.

The second reason was the fact that there are many ways, as both of you know, to provide fire support to forces ashore. That not only includes fire support coming from the air, tactical aviation or airborne artillery, as General Wilhelm calls it, but Tomahawk weapons and other weapons that can perform the land attack mission.

Our view was that there were many capabilities available to provide precision fire support. And I want to underscore that. The requirement is, from Admiral Lopez and General Wilhelm, for precision long-range deep fire support. There are many ways to do that.

The battleships were costing us about $73 million a year per battleship to operate. The Secretary's decision was, given the cost of the battleship and given the lack of precision fire support, we should move forward with a plan to develop a new capability or different capability, given our existing assets, and retire the battleships.

Senator Kennedy. Well, I think there is a logic to that position, but it seems we are waiting—you have the study being done, the COEA study being done.

And I would have thought that probably getting that study and then having an analysis of that study and then having the recommendation about how you see that short fire support developing would be put into some context vis-a-vis the battleship issue.

But we will look forward to——

Ms. Slatkin. If I may, Senator——

Senator Cohen. Do we not have the capability of putting some Tomahawks on battleships? I mean, it is a platform, is it not?

Ms. Slatkin. We have the capability of putting Tomahawks on many different platforms, as you know, submarines and other platforms, as well, cruisers. There are Tomahawks on destroyers, and many other platforms.

But if I may, Senator, you have asked a very good question, if I may respond.

You have essentially said, "How could you make this decision without deciding exactly what path to take—how could you make the decision to retire the battleships without deciding your precise path for replacement of the capability?"

I do not want to mislead you by my response. The analysis that was just completed, looks at what is the most cost effective option available to the Navy to provide deep fire support. Is it through new 155 millimeter guns? Is it through an improvement in propellant on today's guns? What is the right cost effective mix?

There is not doubt we will provide for the new capability. The only question is: What is the right cost effective mix? That is what we are looking for. How much will it cost to get the capability that we need?

Senator KENNEDY. Well, I think that that is—certainly what we want is the outcome, and we will await your reaction to the study and the analysis on that.

On the mine warfare ship pre-positioning, we had gone through at other times the development of the mine warfare countermeasure ships. And at other times, we have reviewed the fact that the preposition ships move considerably faster, 23 or 24 knots versus 12 to 14 knots.

Therefore, unless the mine countermeasure ships can get there sooner, the whole set of assumptions for the strategic sealift and the mobility requirements study would appear to be called into question.

So could you tell us what is the status of the program now, Admiral Lopez?

Admiral LOPEZ. We have made a significant investment down in Ingleside to have a center of excellence.

But to be responsive to a short-term crisis and to upload the mine warfare ships and take them to an area such as Korea would be about 45 or 50 days. So that is the dilemma.

That is why we are trying to be responsive to the CINCs, both in the Persian Gulf and in the Western Pacific. We think we have a good building program.

We have a tremendous investment in mine warfare, as Ms. Slatkin addressed in her opening remarks. So we are quite comfortable with that.

But the dilemma is: How do you get something there for a short-term crisis or an ongoing crisis, for instance off the coast of Korea? So we have had to make the hard decision and preposition some ships.

Now, in an era of peacetime, where you are allowed to train for something like a protracted war, then it would not be a problem.

But as history evolved since 1991, and we are constantly in skirmishes—last year, we were in eight various contingencies—it is something that we are going to have to deal with.

I do not really have a good answer for you, sir, on how we are going to overcome that time constraint of 45 days.

Senator KENNEDY. Is it the present plan, then, that the pre-positioning of them—are you going to preposition them in the Gulf? As I understand, the ship that went to Korea was on its way to the Persian Gulf.

Admiral LOPEZ. We are looking at both areas, sir. Right now, both CINCs would like to have the mine sweepers pre-positioned in the Western Pacific, as well as the Persian Gulf. So we would like to address both.

Senator KENNEDY. Could you tell me, last year we had—this is on the F–18 procurement rate. It was expected last year that you were going to ask for 24 planes, and in the budget, it is down to 12 planes.

Why was the level below the 24 unacceptable last year, and 12 is acceptable this year?

Ms. SLATKIN. This was strictly an affordability decision made by the Secretary of the Navy. When he decided to put readiness and quality of life initiatives first and I believe he has testified in front of your full committee about this—three items, that were reduced compared to the plan that you have before you today, the plan that we provided last year. Twelve F–18s were one of those items.

We believe that the risk was acceptable for two reasons, Senator. First, there are foreign military sales that will sustain the level of F–18 above 24 aircraft, and second because we would like to move to the F/A–18E/F, our next generation aircraft as quickly as possible.

Our plan provides for the first year procurement next year for the F–18 E/F.

Senator KENNEDY. I guess there were some reports that the Navy may not have enough of the aircraft to support the deployments. That is not accurate?

Admiral LOPEZ. In 1998, with our current level of aircraft, it is going to be very tight for that. That includes the decisions we made last year with the Marine Corps to incorporate all Marine Corps squadrons and Navy squadrons together, or integrate them, I should say, so that Navy aircraft would be available to do Marine Corps missions and vice versa with Marine Corps aircraft on board aircraft carriers.

But even so, in 1998, we are concerned about whether or not we will break OPTEMPO during that year. So we are looking at that now as part of our fiscal year 1997 budget development process, whether we will actually have to keep a few extra squadrons on for a few years until the F–18 E/F comes onboard. That study is in process now, sir.

Senator KENNEDY. Well, it is primarily a budget consideration, obviously.

Admiral LOPEZ. Positively.

Senator KENNEDY. Let me ask you, because I am running out of time here, on adopting the aircraft carriers for the littoral warfare, we directed our committee, the National Academy of Sciences, to study the future aircraft carrier technologies. And that was completed prior to the Navy's adoption of its littoral warfare strategy.

Are there plans to alter the design of future carriers to further adapt them to littoral warfare? And if so, what stage of development of the new features are under consideration? And have the development schedule of features influenced the timing of future carrier construction?

Admiral LOPEZ. We are currently studying the new carrier structure, a new type of platform that would follow on to the *Nimitz.* That is due to the Secretary of Defense in September of this year.

Included will be technologies such as propulsion, and whether or not we should have things like the current nuclear propulsion, gas turbine, electric drive, diesel.

All of those things will be considered, things like electromagnetic catapults or arresting gear, various forms of command and control upgrades, fiber optics, all kinds of new weapons systems onboard the carriers.

I think you will have a complete picture, and we are not quite there yet. But we will make that delivery in September.

Senator KENNEDY. We are very interested, and I would like to follow that with you.

Finally, on the pre-positioning ship enhancement, we had $110 million we provided last year. Has the Department made plans for requiring the remaining two ships?

Ms. SLATKIN. We are in the process of working with the OSD Comptroller to sort that out, Senator. I will be happy to provide you a response in writing on what our plans are for the $110 million that you added to our program.

Senator KENNEDY. Within what timeframe?

Ms. SLATKIN. I will try and do that in the next week.

Senator KENNEDY. Okay. Thank you very much.

[The information follows:]

The attached letter, dated May 15, 1999, describing the Navy's plan for the $110 million added to the program was provided to the Subcommittee on Seapower and the Congressional Defense Committees.

THE ASSISTANT SECRETARY OF THE NAVY,
RESEARCH DEVELOPMENT AND ACQUISITION,
Washington, DC.

Hon. WILLIAM S. COHEN,
Chairman, Subcommittee on Seapower,
Committee on Armed Services,
U.S. Senate,
Washington, DC.

DEAR SENATOR COHEN: During the Seapower Subcommittee hearing of May 9, 1995, you requested information on the Navy's actions and plans for acquiring ships for the Maritime Prepositioning Ship Enhancement Program.

Section 1023 of the National Defense Authorization Act for Fiscal Year 1995 authorized the purchase of up to three foreign built vessels for this purpose. The Fiscal Year 1995 Defense Appropriations Act provided $110 million in the National Defense Sealift Fund for the acquisition and Conversion of one ship with the restriction that the conversion be performed in a U.S. shipyard. Since the passage of these Acts, the Department of the Navy has conducted cost and feasibility studies and developed a formal requirement in order to match the known warfighting shortfalls against the limited funds provided. While we believe that an adequate capability can be acquired with the funds provided, the success of this program will depend on the aggressive application of Acquisition Reform and Streamlining initiatives and use of commercial systems. This approach was successfully used in the acquisition of the current Maritime Prepositioning Ships in the early 1980s and the recent Strategic Sealift Program.

Specifically, we are currently developing a streamlined Circular of Requirements based on the warfighting requirements to be issued to industry. The shipbuilding industry will develop the ship designs to ensure maximum utilization of standard commercial design and construction practices and proven commercial components and equipment that are non-developmental items. We are planning a two phased approach. Phase I is the Engineering Design phase with contracts to multiple shipyards where the industry will develop contract design specification and a proposal for Phase II, the Detail Design and Construction of the ship. A draft of the Navy's Request for Proposals will be released for industry comment this July with design contract awards planned for October 1995. The conversion contract award is planned in July 1996.

I trust this information will be beneficial to you. A similar letter has been sent to each of the Chairmen and ranking minority members of the Congressional Defense Committees as well as Senator Kennedy, the ranking minority member of your subcommittee.

As always, if I can be of any further assistance, please let me know.

Sincerely,

W. C. BOWES,
Vice Admiral, U.S. Navy,
Principal Deputy.

Senator COHEN. Senator Robb.

Senator ROBB. Thank you, Mr. Chairman.

I regret that I had a conflict with some of the things that are taking place over on the floor and could not be here for all of the questions. And indeed, we have a vote that is going to start in a couple of minutes, and I am probably going to have to submit some of the questions I have for the record, if I may.

Let me ask a couple questions about areas that I do not believe have yet been discussed this morning. If they have, please just let me know.

I do not know that we have had any discussion in terms of where we stand with the Osprey right now, with the V–22. General Wilhelm, I am curious. That, of course, has been on and off the agenda for quite a number of years.

It is now on the agenda. We have an appropriation, or an amount, designated for fiscal year 1996 and a much bigger purchase in 1997.

Is the current acquisition rate, if completed, sufficient to replace the 53s and the 46s that are going to be phased out during that period?

General WILHELM. Sir, the program, as it is currently structured, will deliver our first operational capability in the year 2001. We will finish outfitting all of our active duty squadrons under the current program, which would be 18 squadrons in the year 2017

Obviously, with that kind of a buy, we are going to have to sustain certain quantities of CH–46s and CH–53s to provide the total capability that we will need for the air assault portion of our tactical mobility requirements.

The program itself is proceeding, I think, very smoothly. We have over $750 million in R&D in fiscal year 1996, and we have $48 million in procurement funds.

Furthermore, Senator, during this Future Years Defense Program, we will actually deliver 37 airplanes, 33 for the Marine Corps and 4 of the CV variants for USSOCOM.

Senator ROBB. Are we going to have to do any kind of a SLEP program on the 46s or the 53s in order to be able to maintain that support capability over that period until the final delivery of the 22s?

General WILHELM. Yes, Senator, we will. Actually, that program takes two forms. In the case of the CH–46, we have a Dynamic Component Upgrade Program, which will replace things like engines, transmissions and rotors, only to the extent that it will bring the aircraft back to its original performance characteristics.

Beyond that, we have a service life assessment program, a SLAP as it is called, which will chart for us the course that we will have to take to sustain that aircraft for the remainder of the time required to complete its replacement with the V–22. So it is a two-part program on the CH–46.

Senator ROBB. Are those funds already identified in the process and part of the long-range budgeting?

General WILHELM. Yes, sir, they are.

Senator ROBB. Let me ask just one other brief question, since the vote has started at this point, and that has to do with the AAAV. I was actually scheduled originally, or looking yesterday, at going out and taking a look at them. I am going to try to go out on Monday.

General WILHELM. Monday, yes, sir.

Senator ROBB. I have not yet seen it, but I look forward to seeing it. But in terms of the replacement schedule for the current AAVs, if we follow the current request, will that provide the kind of transitional support over the period of time that that replacement is taking place?

General WILHELM. Sir, after implementing the PDM–4 decision, we arrived at an initial operational capability for the AAAV of 2008 and we will have a full operational capability by 2014.

Sir, we are kind of stuck with about the same proposition we have with the CH–46 and the V–22, another old system. The first AAV–7s entered the inventory in 1971 that we are going to have to sustain on out to about the year 2014.

Would I like to see the program accelerated? I think probably Ms. Slatkin would agree, as well. If possible, we would certainly like to return it back to about that 2004 IOC date that we had, if that were possible.

Senator ROBB. If it were possible, I suspect we would like to see the end strength go back to 194,000, but——

General WILHELM. Well, sir——

Senator ROBB. Anyway, we will work with you on those numbers.

Mr. Chairman, because of the start of the vote and another commitment that I have, I am not going to be able to return. I would like permission to submit a couple questions for the record, if I may.

Senator COHEN. Absolutely.

Senator ROBB. And I thank the witnesses.

Senator COHEN. Let me proceed with a few more questions before the second bells come.

Let me ask you, General Wilhelm, are you in complete agreement with the Navy on this in terms of fire support? My understanding is that when you are talking about precision versus suppressive forces, the Navy is describing it as a precision fire. But precision fire is used when you know where all the targets are.

In talking to a lot of marines, they want to have suppressive fire, namely you do not know where all the targets are, and you want to keep those potential enemy forces in their foxholes and their guns underground and just suppress them, as opposed to precision fire. Am I incorrect in this?

General WILHELM. No, sir. You are right on both counts. The program that we are looking at actually contains provisions for both.

We are looking for extended range, and we are looking for a PGM. But the PGM would of course be in certain reduced quantities to engage point targets that we had fixed locations on.

Then we would have standard rounds to give us the level of effort that we need, that high density fire support that brings them up out of their holes with white cloths on sticks.

Senator COHEN. Admiral, you talked about the 5-inch gun. Is that going to have a hard target kill capability?

Admiral LOPEZ. Absolutely. Oh, hard target capability?

Senator COHEN. Yes.

Admiral LOPEZ. It depends on how you define hard target. I would like to get back to you and give you more information.

Senator COHEN. I will let you define—how do you define hard target?

Admiral LOPEZ. It is by penetration of a particular thickness of concrete. I do not have the figures with me.

Charlie, if I could ask you to help me out on this. Do you have the target penetration on that one 5-inch round?

I mean, we are just developing that, sir.

General WILHELM. I do not remember. I do not recall.

Admiral LOPEZ. But let me get back to you. I also would add to your set of questions, maneuvering targets. We intend to target those, too.

I do not see any split in what the Marine Corps and the Navy want. Our sole purpose in life, when they go ashore, is to support them. We intend to give them what they need, and that is suppression fire.

[The information follows:]

Within the scope of the Naval Surface Fire Support Program, the Navy is proposing to develop a precision guided extended range 5-inch submunitions round. This round will be used against soft and area targets. This new round will also have limited effectiveness against maneuvering targets since it will dispense numerous grenade type munitions. Under our current plans we are not going to develop a hard target penetrating round. The Navy currently has in their inventory a High Explosive Point Detonating Delay round that is capable of penetrating 8 inches of reinforced concrete, or ¾-inch steel, or 12 inches of brick and mortar. However, this round does not have an extended range capability.

Senator COHEN. I think they are looking for suppressive fire support.

Admiral LOPEZ. Yes, sir.

Senator COHEN. And that does come from the 16-inch. It lacks accuracy, but it sure provides suppressive power.

Admiral LOPEZ. Sir, I could not agree more. I love the 16-inch guns. They are great guns. But it is an older system, and we really believe we have to make the hard decision to move on.

Senator COHEN. Okay. Let me move quickly to the mine countermeasures issue. I know it is complicated, but we have been discussing this for some time now.

The question I have is: Since the Persian Gulf war, which we had some difficulty with mine countermeasures capability, have we made improvements today so that we could in fact remove those mines effectively?

What improvements have we made that would allow us to do that which we could not do at the time of the Persian Gulf war?

Admiral LOPEZ. Let me give you one concrete example that has just occurred in an exercise, Kernel Blitz. We used a system that we call the RMOP, Remote Mine-hunting Operational Prototype.

We had even better success with that than we expected in not only identifying almost 100 percent of the mines that were targeted, but some from last year's exercise, which were not targeted.

So we feel quite comfortable that we are making the right investment so that we can in fact identify where the mines are not and later on, as you articulated, destroy the ones that are there.

Senator COHEN. Is the answer that you could do it today?

Admiral LOPEZ. I think we could do it today with the equipment that we have in the RMOP. If you ask me, could I deploy that equipment today, no.

But we are planning on buying four more of those systems. In fact, I just had that discussion yesterday and I think we are moving in the right direction.

In the near term—and I consider the near term this FYDP—we will be able to deploy the right systems.

Senator COHEN. Okay. I will come back momentarily. I will declare a brief, 10-minute recess, and then we will resume. [Recess.]

Senator COHEN. The meeting will come to order.

We are a little bit rushed, because we are going to have, following this vote, another vote. So I will try to complete my questions.

I am not sure how many other members will be returning. And any questions that we do not ask, we will submit in writing for the record.

Ms. SLATKIN. Surely.

Senator COHEN. Admiral Lopez, perhaps I could direct this question to you. There was a decision made, a somewhat controversial decision made, to consolidate the mine countermeasures forces at Corpus Christi for a variety of reasons that included command oversight, mutual training and better logistical support.

What difficulties, if any, have you encountered in this consolidation? And I would be interested to know how you intend to incorporate the mine countermeasure forces into fleet training, since they are physically rather separated.

Admiral LOPEZ. There are two things that come to mind, sir, with respect to the location. It takes some time to get everything into place. We are not there yet. We are quite satisfied as to the way it is going.

We found that we had to bring the training, some of the training, to the area there in Ingleside, such as the engines, which we have had some difficulty with, and have the engineman trained right on the engines.

I guess I am less concerned with the location and not being able to do some of the fleet training as I might have been, say, 2 or 3 years ago because of the advances in technology. The fact is that you can have an A–6 flying out of Washington State, a carrier off of Norfolk and the mine sweepers in Ingleside, all linked together in a command and control network and participating in an exercise as though they were altogether.

I do not think there is any substitute ultimately for training on the scene together before you fight. That is how we do it when we are going to deploy.

But as far as day-to-day training, we are quite comfortable where we are. We do need a center of excellence for mine warfare. We have let it atrophy so many times this century, and we are determined not to do that.

Now, Lieutenant General Wilhelm and I talked a little bit during the recess about where we are in mine warfare, and I would kind of like to elaborate, and I think he would like to say a few words, if we may, on your previous question, because I had addressed Kernel Blitz and the RMOP.

But also, we are testing UUVs. We are putting a lot of money into R&D in mine countermeasures. We are putting a mine warfare command and control ship together, a mother ship in the sense of *Inchon,* a new concept. Reconnaissance and surveillance R&D money is there.

Senator COHEN. What about the airborne mine countermeasures? That seems to be reduced, rather than increased.

Admiral LOPEZ. We have reduced the numbers, but we are going to increase the capability. It is much in the sense of what we are doing in the entire Navy. We cannot afford a Navy in the same size that we had before.

I think mine warfare is simply a microcosm of what the entire Navy is in the sense that we have to go for better capability and with fewer platforms.

Senator COHEN. Is that not one of the more increased, enhanced risks that the Navy and the Marines face in terms of the shift from the sea, is the proliferation of mines? We did not talk about the Persian Gulf, but that is being seeded pretty heavily right now, is it not?

Admiral LOPEZ. Positively it is, and that is why our emphasis on mine countermeasures and on location and detection, so that we can go, as I said earlier, where the mines are not. That is the most important aspect for us.

I know a number of Marines participated in Kernel Blitz, and I think a good summation of that would tell you where we are by General Wilhelm.

Senator COHEN. General, perhaps you can explain how we can get more for less. You have been rebuilding various old trucks into modern trucks and whatever for less money and saving a third here and 25 percent there.

Now, how are you going to get more airborne, let's say, capability, mine hunting capability, with less money?

General WILHELM. Sir, I think there are a number of ways. One is to look at sensor packages. And here, you know, we have talked about UAVs. You know, I see some very broad applications for UAVs.

We have a prototype system that is in development right now, COBRA, and I will try to get it right. Cobra is the Coastal Battlefield Reconnaissance Analysis System, which will be a payload package for a UAV.

Again, a lower cost airframe than something like a CH–53D that we are talking about for our mine command and control ship for the *Inchon.*

Sir, also, I think we have to do some pretty intelligent things with joint capabilities. We have discussed really two exercises, Kernel Raider, which was conducted in 1994 in California, and Kernel Blitz in 1995 which just concluded.

USSOCOM came onboard with a very useful capability, sir, and I have to check the classification on it at an open hearing. We can—no? But USSOCOM provided us with a very useful capability.

Sir, could I add just a couple of comments to what Admiral Lopez has mentioned, because I think you have hit on a very important subject here?

Senator COHEN. Sure. As long as you suggest that I hit on an important subject, you can. [Laughter.]

General WILHELM. With that opening, how can I miss?

Senator COHEN. Right.

General WILHELM. You know, sir, I guess——

Senator COHEN. You can have another couple of minutes.

General WILHELM. Okay. A couple of minutes, sir.

You know, one of the quotes that probably struck me as strongly as any that I have ever heard was the amphibious operation that did not occur during the Korean war off Wonsan, when an Admiral stated, "We lost control of the seas to an enemy without a Navy, using World War I weapons employed from vessels that were built before the time of Christ."

Not much has changed. In mine warfare, anybody can play, and they can play in the water and they can play ashore. Who was the first man we lost in Somalia? It was not a military man. It was a fellow from another inter-agency group, who we lost to an old land mine near Bardheere.

You know, sir, we have not just focused on hardware. I think we have improved the way we think about mines. As recently as 2 years ago, we looked at this deliberate mine clearing operation.

We have gone away from that now, and we are more into detection and avoidance with an in-stride breaching capability, so that we can maintain the velocity and momentum of operations that we talk about in "Operational Maneuver . . . From the Sea."

And, you know, sir, this is beyond the Navy and the Marine Corps, but of course with the Army as well.

The Advanced Concept Technical Demonstration that we are engaged on now takes mines countermeasures all the way from deep water to shallow water through the surf zone, all the way into the inland objective with things like the combat breacher vehicle, the anti-personnel obstacle breaching system.

I think we are very close to a fairly comprehensive solution to this problem.

Senator COHEN. My understanding was that one of the alternatives you were looking at was an MCAC——

General WILHELM. MCAC, yes, sir.

Senator COHEN. Right. And yet, that has its own problems, does it not?

General WILHELM. My take, sir, was that it worked pretty well during Kernel Blitz. That was another one of the capabilities that was demonstrated—we did a proof of concept on, and, sir, my take is that the MCAC performed well.

Ms. SLATKIN. Yes.

Senator COHEN. My understanding was that when they—they did have a problem with running over the mines and exploding.

General WILHELM. I got the other report.

Senator COHEN. The kind of mine sweeping equipment on it obviously displaced other important equipment as well.

And I understand that a study was done that showed that the air mine sweeping capabilities, the Navy's best alternative for protecting the forces going in. Am I wrong on that?

Admiral LOPEZ. Detecting or sweeping, sir?

Senator COHEN. Sweeping.

Admiral LOPEZ. Well, I think General Wilhelm can address this, as well. We are quite satisfied with the MH–53s. In fact, we just bought four new ones.

They are going to be delivered, or they were delivered in 1994. Now we have combined the reserve and active units together with a total of 12 aircraft. We are quite satisfied with their capability. I think overall, because of the location, they are probably the best mechanical mine sweepers that we have right now.

But we also are looking ahead with the UUV and the RMOP, as I said, for the future. I do not think we should stop with the MH–53s.

Senator COHEN. Edgar Bergen just whispered into my ear, and he indicated apparently you have yet to brief the committee on a particular exercise that we would be in need of. So that may clarify any misunderstanding on my part.

Ms. SLATKIN. I believe that you will find that the results were quite good on MCAC. We would be happy to provide it.

Senator COHEN. All right.

I mentioned the consolidation of the mine sweeping at Corpus Christi. Am I correct now that there is some discussion underway in terms of home porting mine sweepers in the Persian Gulf or in Japan?

Admiral LOPEZ. I do not know of any question of that, sir. The CNO has testified, as well as a number of us, that we intend to put mine sweepers in the Persian Gulf. That is a commitment on our part.

I mentioned that in response to Senator Kennedy's question earlier. But we are fully committed.

Senator COHEN. Fully committed?

Admiral LOPEZ. To put mine sweepers in the Persian Gulf and in the Western Pacific.

Senator COHEN. And home porting in Japan?

Admiral LOPEZ. We have to work that out. That is what we are looking at right now. That will depend on host nation support and some of the other things.

As you know, the Japanese have been very forthcoming in other areas that we have had home porting there. But we are working that out. We simply want the best cost effective solution there is—and we will be looking at OPTEMPO/PERSTEMPO as well.

Senator COHEN. Okay. General Wilhelm, how strongly do the Marines feel about the requirement for the UAV?

General WILHELM. Sir, we see very broad applications for UAVs in an awful lot of forms. We certainly support the initiatives that are ongoing to procure a short-range variant.

As I mentioned, looking at the endurance models, we certainly see the need for those for strategic missions, the short-range variants, like Hunter and Predator, to do the operational-level stuff.

But the third element that we are very interested in is the close range variant, you know, the one that looks over the next hill, a very flexible UAV, which would be instantly responsive to ground commanders who are fighting the tactical battle.

But in terms of reduced risk for battle damage assessment for sensor-to-shooter links, we have already achieved that, both in practice and for real with the Pioneer system. And, of course, we look forward to a follow-on system that will have more endurance and better capabilities and better sensor payloads.

Senator COHEN. Would we be better off with a vertical takeoff and landing on these, Admiral or General?

General WILHELM. Sir, I think it depends on the application. When we look at amphibious ships, if we could get a VTOL-type UAV, it would be very handy. It would spare us requirements like clearing the flight deck for recovery of large wingspan UAVs.

Similarly, some of the vertical takeoff and landing devices, like the Eagle Eye, I think, is one that was tested, are very transportable. They have a lot of tactical utility, I think, between the vehicle and its down-link station that can go in a couple of HUMVEE's.

So, sir, from a ground commander's perspective, yes, sir. To have vertical takeoff and landing capability I think would be extremely useful.

Senator COHEN. Okay. Admiral.

Admiral LOPEZ. The only thing I would add is that the sea-based UAV is an absolute mandatory requirement for us. We intend to be there first. I think, whether it is Hunter or something else, as General Wilhelm has described, it is a requirement for us for tactical reconnaissance.

Senator COHEN. Secretary Slatkin talked about the LPD–17 very glowingly in her opening remarks. And I notice in the budget you have delayed the ship from fiscal year 1996 to fiscal year 1998.

And the question I have is: With such a high priority placed on this ship, why not fiscal year 1997, as opposed to 1998 budget? Or are there problems in the development?

Ms. SLATKIN. There are no problems right now in the development of the ship, Mr. Chairman. As I mentioned earlier, this was one of the three items that the Secretary of the Navy and the Secretary of Defense changed from what we sent you last year to what we sent you this year for fiscal year 1996.

Those three items were F–18, 12 less; LPD 17, moved 2 out years because of affordability; and the third DDG. Those were the three items that no longer show up in the Fiscal Year 1996 budget request.

Senator COHEN. Let me talk about force sustainment. I have enough time to talk about that. And whatever I do not finish, I will submit to you for the record.

Ms. Slatkin and Admiral Lopez, from your testimony at last month's hearing on shipbuilding, we all gather you consider progress in the acquisition of strategic sealift to be adequate, including the funding of this year's budget. Right?

Ms. SLATKIN. Yes, sir.

Senator COHEN. And General Wilhelm, last year's budget included a provision for enhanced MPS, a program for the Marine Corps and a markup of the defense authorization bill. There were some initial objections to this proposal by DOD, but could you tell me what the current state of play is with respect to this?

Ms. SLATKIN. Are you talking about the National Security Defense Features for sealift ships?

Senator COHEN. The enhanced MPS.

Ms. SLATKIN. Go ahead, general.

General WILHELM. Do you want to do the ship, Admiral Lopez, and I will do what is on it?

Admiral LOPEZ. I do not see a problem with the enhanced MPS right now to buy. We are looking at anything following onto that, if we could get additional ships. But it is an affordability issue for us.

There were some difficulties downstairs when that ship was first appropriated and authorized. We have overcome those, and I think it is on track.

Senator COHEN. I was noting that from the sea doctrine, we have gone from the Reagan-Bush years of the 450 ship goal down to 346. And most of that decline comes in the submarine force, from 80 down to either 45 or 55.

We will not have to get into what is going on with respect to the production of ships by the Russians at this point. But it does at least raise another question for me in terms of the tender support ships which also have been reduced.

As a cost-saving measure, I think the Navy has decided all but to eliminate the tender and repair ship forces and plans to shift these ship repair capabilities to shore. Am I correct?

Admiral LOPEZ. That is correct, sir. I would like to comment on two or three things you made in your statement. One was that the majority of those ship cuts were in submarines.

Senator COHEN. It went from 80 to 45.

Admiral LOPEZ. Yes, sir, it does in the nineties, from now through the end of the FYDP. But in the rest of the force, we took out over a ship a week in 1993 and 1994. The reason that the submarines did not come quite as quickly was because they are nuclear, and industry could not accept that many cuts. So we will not reach the 346, 343 level until the end of the century.

Senator COHEN. That sounds like a long time off, but it is only 4½ years away.

Admiral LOPEZ. Yes, sir. In another 4½ years, you are right, sir.

Senator COHEN. Can you talk about the tenders?

Admiral LOPEZ. The tenders——

Senator COHEN. Just as to the shore—I would like to know exactly where are these capabilities that we are going to now shift the repair capabilities to? Where is the infrastructure that has been developed that will allow us to do that, as opposed to——

Admiral LOPEZ. We have the infrastructure in regional maintenance, sir. The hubs are what we intend to use. We are bringing the tenders down pretty quickly.

But in the 1996/1997/1998 timeframe, we will move to the four active tenders, and then we will also have two tenders that we could bring out of the reserves within 180 days, if we have to do that.

Senator COHEN. You see, one of the problems I have is that there seems to be some conflict in terms of the concept on the one hand. ". . . From the Sea" seems to anticipate you are going into a warfighting situation, which you may not have access to ship repair facilities in particular areas.

On the other hand, we are seeing de-emphasis and practical elimination of the tender capabilities. So I do not know how you rationalize——

Admiral LOPEZ. The primary reason——

Senator COHEN. Tell me how you rationalize it.

Admiral LOPEZ. Yes, sir. The primary reason to keep the four is to deploy. Those will all be deployable tenders. Right now, I believe that we will probably go to three submarine tenders and one destroyer tender. That is being discussed now.

If we do that, it will be a change from two and two. But again, they will deploy, and the two that are in the reserves would also surge forward as well.

Senator COHEN. Edgar Bergen is back, and he wants me to ask about the tender, the Tomahawk reloads. Is this a capability that the tenders have?

Admiral LOPEZ. We are looking at that, sir. We need to be able to replenish our Tomahawks overseas. You are exactly right on that trying to put the Tomahawks back into the tubes and replenish them is a difficult proposition for us.

So we want to be able to do that. I do not have an answer for you as to where we will be going on that, but let me take that for the record and get back to you in the next few days.

Senator COHEN. Okay. Ship self-defense. This has been subject matter of considerable interest to the committee. I would think, looking at ". . . From the Sea" doctrine, it would be of core interest to the Navy.

And yet, it would appear that it has not been marginalized but at least reduced more than at the margins in terms of some of the programs that appear to be under-funded.

For example, the infrared search and track system. Again, was this a budget-driven decision, or is there some problem with the program maturity, or what is the reason that this program appears to be under-funded?

Ms. SLATKIN. The concern regarding the infrared search and track program was an affordability issue, a budgetary issue, between Admiral Lopez and myself. I am not aware that there is a technical reason why we are not funding this program.

But, Mr. Chairman, I would take exception with your initial statement that we are not paying enough attention to ship self-defense programs in this particular budget.

I agree entirely that the IRST program is one where we have allowed affordability to drive our priorities, but I do not agree that is the case in all the rest of the elements of the ship self-defense program.

Senator COHEN. Well, we are going to look at the rest of those. But you would say that is one area that is under-funded currently.

Ms. SLATKIN. That is one area that is under-funded, yes.

Senator COHEN. Okay. How about the Cooperative Engagement Capability?

Ms. SLATKIN. The Cooperative Engagement Capability, as you know, is a very important capability for us for the future.

As I mentioned in my opening statement, not only has the Congress pushed us to move forward with Cooperative Engagement Capability, but Dr. Perry directed the Navy to accelerate the program.

This past year, Admiral Lopez and I decided to add $96 million to the Cooperative Engagement Capability program to accelerate that program, to accelerate the testing of it and to accelerate the installation of it. We added money not only in fiscal year 1996, but we added money in fiscal year 1997 as well.

Senator COHEN. Have there been adequate testing of the program to date?

Ms. SLATKIN. To date, there has been very successful testing. We need to run another operational test to make sure before we go into full rate production. But we have had a very successful test on the *Eisenhower* last summer that really demonstrated the capability.

Indeed, we are committed to moving forward to linking it with the E–2C, so that not only do we have all of our ships netted, but we have our aircraft netted as well, to give anyone, wherever they are located in the battle force, the ability to see all targets coming at them.

Senator COHEN. How about the NULKA?

Ms. SLATKIN. This committee added $8 million for NULKA, as I recall, last year to buy additional decoys.

Senator COHEN. It is my understanding that DOD cut about $4 million out of this year's submission of budget.

Ms. SLATKIN. That may be true because of the addition by the Congress in last year's program, since I believe you accelerated——

Senator COHEN. In other words, we put a higher priority on it than the Navy did.

Ms. SLATKIN. Because you accelerated our program last year, I believe they cut our program in fiscal year 1996 by some amount. We are moving toward a decision sometime this year to proceed with buying NULKA. It is an important program for us. There is no doubt about it.

Senator COHEN. So you think it is adequately funded now.

Ms. SLATKIN. I believe it is adequately funded, yes, Senator.

Senator COHEN. Okay. The Tomahawk. I think we had some problems with the Tomahawk. You talked about precision guided missiles. We had some problems during the Persian Gulf war with some of the precision on the Tomahawk, did we not?

Ms. SLATKIN. I am not sure that I would characterize it as problems. I think that——

Senator COHEN. Well, undesirable collateral damage, I think, is the way we classified it.

Ms. SLATKIN. Yes, sir. With the previous system, we had to fire more missiles than we would have liked to hit the target. There is no doubt about that.

What we have in our development program in Tomahawk are efforts to increase and improve the accuracy and the reliability of the missile to remove those problems with collateral damage in the future.

We have a particular initiative that Dr. Perry directed last year to enhance the precision strike capability of Tomahawk. We recently demonstrated that in Florida.

Senator COHEN. Now, my understanding is that a contractor has submitted a proposal which is now called PST–2. Are you familiar with that?

Ms. SLATKIN. They may well have submitted a proposal.

Senator COHEN. Is that out of sync with the budget proposal? Do you have any commentary on that particular proposal?

Ms. SLATKIN. I am not aware of their proposal. Let me make a remark, though, about the contract and what we are looking for.

Because, as I said, reliability and accuracy are really important for us for the next generation Tomahawk, we have incentivized the contractor to come forward with ways to enhance the system's reliability. That may well be the proposal that they have submitted.

Senator COHEN. Admiral Lopez, are you satisfied that you have adequate ship self-defense capabilities right now?

Admiral LOPEZ. I would like to buy more.

Senator COHEN. Or better.

Admiral LOPEZ. I would like to buy more and better. It is a matter of money, sir. We——

Senator COHEN. Have we done less and better? I was just wondering, because before you said we had fewer——

Admiral LOPEZ. Well, we have—as Ms. Slatkin said, and I am quite satisfied that our program is balanced. With the money that we have, whether that is buying RAM or Evolved Sea Sparrow or CIWs or NULKA or any of our programs, we are trying to balance those across the force with the funding that we have and not atrophy our modernization plan so that we are still buying platforms out in the future.

We do have a fiscally constrained budget, and we are trying to balance that across the board.

Senator COHEN. How about command, control, communications, computers and intelligence? The budget seems to be somewhat in decline in this area where you all have indicated the connectivity of hooking up and being able to communicate in this new super highway that we have constructed.

And yet, the budget appears to be in somewhat decline. Can you discuss the adequacies or deficiencies of where we are with this area?

Ms. SLATKIN. Our highest priority in C^4I is obviously Cooperative Engagement Capability. Tying the battle force together and linking the battle force to the joint task force has to be key, and it has to be our highest priority.

As I said, we added money to ensure that we could accelerate this program and make it a reality in the near term. There is no doubt that that is our highest priority.

Beyond that, we have obviously tried to level and make sure that we balanced our force, in terms of our ability to pass data amongst our aircraft, to pass data with our ground forces, our ability to identify friend and foe and avoid fratricide, our ability to communicate, communicate amongst deployed Marines all the way back to the command ship.

So we have tried to structure a program here in terms of our command, control, communications program that cuts across the spectrum. But our highest priority has been to make sure that we have accelerated CEC, and we have clearly done that at the risk of lesser priorities.

Senator COHEN. And you believe that is reflected in the budget as being your highest priority.

Ms. SLATKIN. Yes, sir.

Senator COHEN. Admiral Lopez.

Admiral LOPEZ. I agree with that. Yes, sir.

Senator COHEN. General Wilhelm.

General WILHELM. Sir, ours is pretty much a matter of record. In one of your opening statements, you mentioned the testimony I had been quoted on about the Marine Corps' need for about $1 billion a year to modernize itself. Our procurement budget next year is $474 million. That is about the lowest it has been since 1972.

Sir, 35 percent of our procurement budget is going to C^4I, and 23 percent of our R&D money is going to C^4I. We are buying out SINCGARS.

We are sinking money into the Tactical Combat Operation System, which will give us across-the-board situational awareness for all echelons of command ashore, and we are trying to get more money into JTIDS.

So that is really the blue chip item in our procurement account next year.

Senator COHEN. Well, I was just reading the item. It says, "The Marine Corps, in highly unusual, candor has told a key congressional committee or panel that it wants its annual weapons procurement budget raised by about $345 million."

So I want to applaud you for being unusually candid. I am not sure what that implies for all of your predecessors who have appeared before the committee, but——

General WILHELM. It has gotten me a lot of phone calls, sir. [Laughter.]

Senator COHEN. And it goes on. "Wilhelm's remarks are somewhat surprising since the military leadership typically endorses the administration defense plan. His remarks also represent among the most serious criticisms today of the Marine Corps, of their modernization plan."

Would you disagree with that characterization?

General WILHELM. Sir, as I said, I tried to state a requirement. You know, you cannot modernize a force with pocket change.

Senator COHEN. That last comment will probably get you some phone calls.

Well, we have another vote on. I have additional questions, but I will submit them for the record.

Senator COHEN. I want to thank the panel. You have been very helpful. The information is important.

And, General Wilhelm, you have survived your first appearance before the committee. We hope you will come back.

Admiral Lopez, you are always welcome.

Admiral LOPEZ. Thank you, sir.

Senator COHEN. And, Secretary Slatkin, in any capacity, you are always welcome back here.

Ms. SLATKIN. Thank you, Mr. Chairman.

Senator COHEN. The committee will stand adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR WILLIAM S. COHEN

Senator COHEN. Secretary Slatkin, if there is only enough propeller work to sustain one full integrated facility would the Navy protect its Propeller Facility at Philadelphia with directed work?

Ms. SLATKIN. If the workload would decline to the point of only sustaining one facility, the Navy would carefully review its overall needs before protecting the Propeller Facility with directed work.

Senator COHEN. Secretary Slatkin, while Philadelphia does not currently supply Controllable Reversible Pitch (CRP) propellers to the Navy, is it correct that it is capable of doing so?

Ms. SLATKIN. No. Controllable Reversible Pitch propellers are built to proprietary designs owned by industry.

Senator COHEN. Secretary Slatkin, what is the likelihood that the Navy would be unable to purchase CRP propellers on the world market at competitive prices.

Ms. SLATKIN. The Navy believes that it could purchase CRP propellers on the world market at competitive prices. However we would need to carefully consider such an action to properly account for adverse impacts to existing ship programs and support of the current fleet.

Senator COHEN. Secretary Slatkin, which of the world's propeller manufacturers is considered to be the most efficient and technologically advanced?

Ms. SLATKIN. There are several manufacturers throughout the world that can efficiently produce technologically advanced propellers. However, attempting to rate them as "most" would depend on several undefined factors which depend on the application.

Senator COHEN. Secretary Slatkin, does DOD already have the authority under existing statute to restrict propeller procurement or manufacture to domestic sources for mobilization reasons, if deemed in the national interest?

Ms. SLATKIN. Yes it does.

QUESTIONS SUBMITTED BY SENATOR EDWARD M. KENNEDY

Senator KENNEDY. Secretary Slatkin, I believe that the committee has been patient in waiting for the Navy to analyze the requirements for providing shore fire support to expeditionary forces. We were faithfully promised that the results of the cost and operational effectiveness analysis (COEA) would be finished and delivered to the Congress last year. I would note that it was at this subcommittee's insistence that the Navy has been conducting this COEA analyzing various shore fire support alternatives. Navy officials had, in effect, been saying, "Let's wait for the COEA results. These results should be the basis for making any improvements.

I understand now that the Navy has, after several years worth of analysis, decided to throw out the stated requirement the COEA in favor of a reduced requirement. A cynic might surmise that the Navy has not been dealing honestly with the committee in the past by asking us to wait for the analysis before taking action. Why should the committee be persuaded that future COEA efforts will not be corrupted if the COEA results can be so easily ignored, as they appear to have been in this case?

Ms. SLATKIN. The Naval Surface Fire Support COEA has provided the Navy with valuable analysis that is the basis for—programmatic decisions regarding fire support capability. The COEA options were not cost or time constrained with all options having initial operational capabilities of at least fiscal year 2003. The COEA concluded that a combination of gun and missile systems are required for fire support and that guided projectiles are required regardless of gun size. The COEA identified eight gun/missile options as cost effective. A 155 millimeter gun using an advanced propellant, precision guided munitions, together with Tomahawk was the most cost effective combination.

The Navy's current plan for fire support incorporates a combination of both guns and missiles and provides for the development of an advanced propellant guided projectile as indicated by the COEA. The focus of the current plan is to achieve Naval Surface Fire Support improvements in the near term, fiscal year 2001, and to take advantage of the large population of over 150 Mk 45 5-inch guns remaining in the fleet. These guns represent about a $2 billion investment. The Navy, in full concurrence with the Marine Corps, is proceeding with a fiscally prudent near term program to improve the Mk 45 Gun system and develop an extended range guided munitions to provide enhanced fire support capability. Development of a 155 millimeter gun is being evaluated for outfitting with the 21st Century Surface Combatant.

Senator KENNEDY. Secretary Slatkin, at our last hearing with you, we discussed the planned striking of the battleships. As I recall, neither you nor Admiral Lopez had been made aware that Secretary Dalton had signed such an order.

I am concerned that the Navy could implement this action precipitously. While I would agree that we need to find savings everywhere we can, I understand that keeping these ships in mothballs only costs about $200,000 per year. I do not believe that we should throw these ships away until the committee has had the opportunity to evaluate the shore fire support COEA results and the Navy's plans for implementing necessary improvements. Can you assure the committee that no irreversible action will be taken until the committee has an opportunity to markup the Defense authorization this year?

Ms. SLATKIN. The decision to strike the four *Iowa* class battleships was made after carefully weighing many factors including: the cost of reactivation, the time to reactivate (in excess of 1 year) and the expense of operating and maintaining a 50-year-old ship. The work currently being conducted on the battleships by the Naval Sea Systems Command is a modified procedure designed to render systems on board the ships inoperative with the finality of full scale demilitarization. This is similar to procedures used when the battleships were mothballed previously. The actions taken are primarily focused on securing the gun mounts and turrets in a safe orientation and removal of support equipage not part of the ships' structures. Most importantly, the ships can be returned to mobilization status in a reasonable period of time, as quickly as they could from a normal deactivated status.

The Navy is currently receiving considerable interest in preserving this ships as memorials. If this turns out to be the case, we will ensure that they are maintained in a status as outlined above. Should any of the battleships not become memorials, we will retain them in one of our storage facilities for the foreseeable future vice making them available for sale.

NULKA DECOY JAMMER

Senator KENNEDY. Admiral Lopez, the Navy's budget finally includes a plan to bring the NULKA decoy jammer into production. This committee had taken the lead to ensure that the Navy tested this system before deciding to terminate it. This testing convinced the Navy that it should produce and deploy the NULKA decoy jammer.

Nevertheless, there may have been a problem in budgeting adequately for the research and development portion of the program this year as NULKA transitions into production. I understand that R&D funds for integrating NULKA into the ship self defense system were inadvertently deleted from the fiscal year 1996 budget. I understand that there may have also been some new information on threats that would cause us to spend some money to make the NULKA payload reconfigurable. Can you shed any light on this problem?

Admiral LOPEZ. In fiscal year 1995, a congressional plus-up of $8.0 million research and development funds was added to the NULKA program to complete the integration of NULKA into the Ship Self Defense System. The office of the Secretary of Defense comptroller considered this plus-up as forward funding for the existing stand alone system and removed all NULKA fiscal year 1996 research and development funds, a total of $4.4 million. Without this fiscal year 1996 funding we are unable to complete the integration of NULKA in the Ship Self Defense System. This leaves NULKA as a stand alone system with an interface only to the AN/SLQ–32 Electronic Warfare System.

With respect to NULKA payload changes, we are always cognizant of the fact that the anti-ship cruise missile threat continues to evolve and become more challenging. We are pursuing adding the capability to reprogram NULKA's payload in order to provide the flexibility needed to maintain an asset that enhances fleet operational capability now and into the future.

BATTLE SURVEILLANCE

Senator KENNEDY. Admiral Lopez or General Wilhelm, one of the significant shortfalls in the Persian Gulf war was our ability to provide real time targeting of enemy ground forces. The Air Forces developmental JSTARS system apparently worked onders, but there was only one of them. On what system or systems would the Navy and Marine Corps rely to provide JSTARS-like capability until the Air Force is able to deploy them to a theater of operations?

General WILHELM/Admiral LOPEZ. There are currently no Navy or Marine Corps systems that replicate JSTARS. Therefore, until JSTARS arrives in theater, our intelligence centers will, through all-source fusion and analysis, develop and maintain an intelligence picture through a variety of collection assets. National imagery assets and the capabilities of the U.S. cryptologic system would be employed to detect, locate, identify, describe, and track strategic and operational targets located throughout the area of operations. For example, national imagery systems provide imagery information to the Joint Services Imagery Processing System (JSIPS) for processing and dissemination; national and theater airborne assets, such as the U–2, RC–135, GUARDRAIL Common Sensor, provide information which is received via the Tactical and Related Applications (TRAP), Tactical Reconnaissance Intelligence Exchange System (TRIXS), Tactical Intelligence Broadcast System (TIBS), and Tactical Data Information Exchange System-B (TADIX–B) broadcasts. Human intelligence collection is used to supplement the efforts of our technical collection capabilities and provide in-depth information concerning critical collection targets. Organic, tactical assets such as the Pioneer UAV, manned aircraft such as the EP–3, EA–6B, F/A–18D, Radio Battalion, Force Reconnaissance and Division Reconnaissance Companies, and Counterintelligence and Interrogator-Translator Teams would also be employed as early in the operation as possible, providing responsive collection against key targets within range of their capabilities. The information gathered by the various collection assets would be received, processed, and analyzed (fused) at various intelligence centers afloat and ashore and then provided to commanders as all-source intelligence for their use as appropriate.

The F–14 Tactical Air Reconnaissance Pod System (TARPS) provides same day and the F/A–18 Advanced Air Reconnaissance System (ATARS) provides near-real time targeting information and are currently the closest in providing JSTARS like real time capability. To support Navy/Marine "*Forward . . . From the Sea*" and littoral warfare strategy, the Navy is investigating a complementary overland Synthetic Aperture Radar/Moving Target Indicator and precision targeting capable system. An independent assessment is being conducted to assist the Navy in determining the most effective approach in fielding this capability.

Senator KENNEDY. Does it concern either of you that the Navy and Marine Corps forces could be compelled to operate without this capability for some period of time?

General WILHELM/Admiral LOPEZ. Yes. Real time intelligence on enemy force disposition is of paramount importance in any military operation. The Navy is exploring plans to field systems (i.e. SAR/MTI) that will provide the expeditionary force commander with down-linked real-time surveillance and intelligence information of the entire littoral area from its long-range, high endurance maritime surveillance aircraft force. These air platforms will be able to provide a fused picture of wide area and/or focused battlefield coverage, incorporating information garnered from national and strategic assets, while providing precision targeting and battle damage assessment with onboard sensors to strike assets and on-scene forces. The earliest IOC for this capability is approximately fiscal year 2000.

The Marine Corps has a validated requirement for real time surveillance and targeting data. The Assistant Commandant of the Marine Corps approved a Mission Needs Statement for JSTARS connectivity on April 30, 1993. This program has been assigned an Acquisition Category III and a proposal for a Cost and Operational Effectiveness Analysis (COEA) has been forwarded for approval. This COEA will examine the level of information required, the most effective way to receive the information, and how to redistribute that information to those organizations requiring it. The JSTARS Ground Station Modules will be evaluated to determine how best to interface with the Marine Corps Intelligence Analysis System (IAS) and Tactical Combat Operations (TCO) system.

ADVANCED AMPHIBIAN ASSAULT VEHICLE

Senator KENNEDY. This subcommittee has been very interested in fielding the replacement for the current amphibious tractor. I believe that it is critical because other systems supporting the "Operational Maneuver from the Sea" concept will not work unless we are able to field the capabilities promised by the AAAV. I think that everyone is well aware that DOD slowed this system down during the last budget review.

General Wilhelm, can you describe the new schedule and how the program is different now?

General WILHELM. The Advanced Amphibious Assault Vehicle (AAAV) remains the Marine Corps number one ground program. Our requirement for the AAAV was revalidated by the expanded Joint Requirements Oversight Committee on February 16, 1995. On March 15, 1995 the Defense Acquisition Board approved the AAAV program for Milestone (MS) I Demonstration and Validation.

Program Decision Memoranda 4 of December 16, 1994 reduced program funding by $189.8 million. This reduction will slip the projected IOC of the program from fiscal year 2005 to fiscal year 2008. The AAAV is a concept based requirement that supports the naval strategy of ". . . *From the Sea*", "*Forward . . . From the Sea*", and the operational concept for the projection of maritime power "Operational Maneuver from the Sea." As the third leg in the mobility triad which includes the Landing Craft Air Cushion (LCAC) and V–22 Tilt Rotor Aircraft, the AAAV will provide the Marine Corps an amphibious vehicle with the water and land mobility, firepower, survivability, and lift to fully execute all assigned missions across the entire spectrum of conflict. The next generation technology of the AAAV will provide unprecedented mobility for naval forces. For the first time, landing forces will have the capability to seamlessly transition from maneuvering at sea to maneuvering ashore, making over the horizon surface attack and ship-to-objective maneuver possible. Once ashore, the AAAV will provide the Marines with enhanced capabilities for ship-to-shore, riverine, and shore-to-ship movement.

As the primary surface vehicle for ground combat and for all contingencies short of combat, the AAAV will provide the Marines significantly enhanced armored protection, lethality, and NBC defense. The mobility, speed, firepower, and survivability of the AAAV affords naval forces the flexibility and versatility to operate more effectively in the increasingly chaotic littorals of the 21st Century. From lower intensity missions currently viewed as Operations Other Than War, such as humanitarian assistance, noncombatant evacuation operations, and peacekeeping or peacemaking, to the higher intensity missions of the amphibious assault and ground combat ashore, the AAAV will provide the Marines a dramatic increase in capability over the current AAVP7 which reflects 1960s technology. The AAAV will be one of the most advanced capable weapon systems in the world. Coupled with the V–22 and the LCAC, the AAAV will provide U.S. naval forces the full range of capabilities to exploit our technology superiority.

The current capability of the AAV7A1 will be maintained through a funded Product Improvement Program. Although delayed, the AAAV program remains healthy—a Milestone II DAB is planned for fiscal year 2002. The new schedule contains a Demonstration and Validation (DEMVAL) that was stretched 2 years. The stretch was required to accommodate the $189.8 million reduction in fiscal year 1996 to fiscal year 1998. The program will proceed with a stretched DEMVAL that will produce and test a single prototype prior to Milestone II. Engineering and Manufacturing Development and production have correspondingly moved out 2 years. Milestone III full rate production decision is expected in fiscal year 2008; and Full Operational Capability is planned for fiscal year 2014.

Senator KENNEDY. Secretary Slatkin, were there any concerns you had in seeking approval for the AAAV at its recent milestone review?

Ms. SLATKIN. None. We are all concerned with a development schedule that will take longer than needed, but the Acquisition Decision Memorandum signed on March 17, 1995, contained no issues.

Senator KENNEDY. Secretary Slatkin, I understand that the Hunter UAV program has been experiencing some troubles as we try to field it. I understand that you commissioned an independent review of the program. Have you made any decisions on what to do about the Hunter program?

Ms. SLATKIN. The Hunter program, originally conceived as a Non-Development Item acquisition strategy, is almost 1 year behind delivery schedule and has experienced acceptance test failures, late deliveries of logistics support analysis and spares, training deficiencies, and hardware and software problems. These problems led me to defer a decision in July 1994 to proceed with additional Low Rate Procurement until specific actions were successfully demonstrated. These include: successful completion of an Operational Tempo Demonstration; First Article Flight Tests; and Acceptance Test Procures on the delivered systems.

In an attempt to further address these program concerns, I established an Independent Review Team to review the program and to provide recommendations for actions that would ensure the program could provide a system capable of meeting the operational performance requirements. The Independent Review Team concluded that:

- The system performance essentially meets specifications.
- We significantly underestimated the task of integrating the off-the-shelf components into a fieldable, supportable system.
- The system has effectively been in a development stage.
- The system design needs to stabilize and mature.
- Reliability and maintainability need to grow to meet the users performance requirements.

Based on these reviews, I recommend a path that includes:

- Completion of the current Hunter contract.
- A user demonstration to be conducted in the fall 1995.

The user demonstration will demonstrate what fixes are required for the Hunter system if we are to proceed. The user demonstration will inform us as to how to proceed. After the Fall 1995 User Demonstration, a December 1995 Defense Acquisition board should be held to decide how to meet the tactical UAV requirements.

Senator KENNEDY. I also understand that there was supposed to have been a recent Joint Requirements Oversight Council (JROC) review of the overall issue of UAVs. Can you report whether the JROC has decided to make any changes in the several UAV programs the Department is developing?

Ms. SLATKIN. I understand that the JROC at a meeting on April 25, 1995, agreed that the short range UAV requirement is a high priority for the UAV effort. They highlighted that priority for a requirement does not necessarily translate into priority for any specific UAV program. They also agreed that their Special Studies Group (SSG) should develop, and return to brief the JROC on the user demonstration strategy when the Hunter system will be tested against the short range UAV requirement. Additionally, they concurred that no funds beyond first Low Rate Initial Production should be expended until after the user demonstration. The JROC also discussed the need for going beyond merely UAV requirements, to assess the total reconnaissance and surveillance effort including UAVs, as well as manned and national systems. The JROC directed that the SSG remain involved with developing endurance requirements to focus technology efforts, reduce redundancies, and cover gaps in capability.

[Whereupon, at 11:29 a.m., the hearing was adjourned.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 1996 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, MAY 16, 1995

U.S. SENATE,
SUBCOMMITTEE ON SEAPOWER,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

REQUIREMENTS FOR CONTINUED PRODUCTION OF NUCLEAR SUBMARINES, SUBMARINE INDUSTRIAL BASE ISSUES, PROCUREMENT STRATEGY AND ASSOCIATED FUNDING

The subcommittee met, pursuant to notice, at 9:32 a.m., in room SR–222, Russell Senate Office Building, Senator William S. Cohen (chairman of the subcommittee) presiding.

Committee members present: Senators Cohen, Warner, McCain, Lott, Smith, Nunn, Kennedy, Robb, and Lieberman

Also present: Senators Dodd and Chafee.

Committee staff members present: Richard L. Reynard, staff director; George W. Lauffer, deputy staff director; and Christine K Cimko, press secretary.

Professional staff members present: Romie L. Brownlee, Steven C. Saulnier, and Cord A. Sterling.

Minority staff members present: Arnold L. Punaro, minority staff director; John W. Douglass and Creighton Greene, professional staff members.

Staff assistants present: Pamela L. Farrell and Jason Rossbach.

Committee members' assistants present: Dale F. Gerry, assistant to Senator Cohen; Grayson F. Winterling and Judith A. Ansley, assistants to Senator Warner; Ann E. Sauer, assistant to Senator McCain; Samuel D. Adcock, assistant to Senator Lott; Richard F. Schwab, assistant to Senator Coats; Thomas L. Lankford, assistant to Senator Smith; Glen E. Tait, assistant to Senator Kempthorne; Patricia L. Stolnacker, assistant to Senator Santorum; Andrew W. Johnson, assistant to Senator Exon; Steven A. Wolfe, assistant to Senator Kennedy; John P. Stevens, assistant to Senator Glenn; William Owens, assistant to Senator Robb; John F. Lilley, assistant to Senator Lieberman.

OPENING STATEMENT OF SENATOR WILLIAM S. COHEN, CHAIRMAN

Senator COHEN. The committee will come to order. This morning the Senate Armed Services Subcommittee on Seapower meets to review the Department of the Navy's submarine programs within the context of the fiscal year 1996, Department of Defense budget and future years defense program.

Given the number of witnesses, the complexity of the issues and the opposing points of view, this is likely to be a fairly lengthy hearing. So consequently, my remarks will be brief, or I should say relatively brief.

And I would ask our witnesses to try and be as succinct as possible in presenting their statements so there will be sufficient time for questioning.

We have three panels of witnesses this morning; one representing the Department of the Navy, a second representing the nation's two nuclear submarine builders, and a third composed of representatives of the government organizations who review the Department of the Navy submarine acquisition strategy on a continuing basis.

The witnesses on panel one this morning will be the Hon. Nora Slatkin, the Assistant Secretary of the Navy for Research, Development and Acquisition, soon to achieve another position which she will talk about momentarily; Adm. Bruce DeMars, the Director of the Naval Nuclear Propulsion; and Vice Adm. Joe Lopez, the Deputy Chief of Naval Operations for Resources, Warfare Requirements and Assessments.

Panel two will consist of Mr. William Fricks, President of Newport News Shipbuilding and Drydock; Mr. James Turner, Jr., the President of Electric Boat Division of General Dynamics Corporation; and panel three, Mr. Ron O'Rourke, Congressional Research Service; Ms. Cindy Williams, Congressional Budget Office; Mr. Richard Davis, the Government Accounting Office.

A significant portion of the Navy's budget for fiscal year 1996 is devoted to the development and procurement of nuclear submarines. There are conflicting views on how these resources should be invested. Consequently, it is important that the subcommittee inform itself on the various issues at stake so that we can chart a proper course when we prepare this year's defense authorization bill.

Today's witnesses, I think, are well suited to illuminate and frame the issues at hand. The principal areas of inquiry at today's hearing include the requirement to procurement a third *Seawolf* submarine, SSN–23, at a cost of $1.5 billion, the Navy's procurement strategy for the New Attack Submarine.

This year the Navy proposes to commit a third and final installment on the SSN–23 and has budgeted $1.5 billion for that purpose. The Navy has already invested approximately $900 million for this submarine to purchase nuclear components and to preserve the submarine industrial base.

Prior to this year, the principal argument offered for the acquisition of the SSN–23 has been the need to preserve the submarine industrial base. The boat has been described as a bridge that will keep the industrial base intact until the first New Attack Submarine in fiscal year 1998.

This year the Navy has also spoken of the need to procure the SSN–23 to counter an aggressive Russian submarine building program that is producing submarines that are quieter than our current front line attack boat, the SSN–688.

These two justifications, submarine industrial base and the nature of the threat, both merit evaluation.

Based on guidance in the Defense Department's Bottom-Up Review, the Navy intends to allocate the design and construction of the New Attack Submarine to a single shipbuilder, Electric Boat. This decision has proven, to say the lease, quite controversial.

Questions have arisen as to whether this strategy is the most cost effective for the country at a time when the defense budget is in decline, the Navy's modernization accounts are at their lowest level since before the Korean War, and the number of new ships being built for the foreseeable future will not sustain the Navy's stated force structure objectives.

These questions have in turn produced proposals that Congress intervene to ensure competition for the New Attack Submarine. Such intervention against a strong Department of Defense position should not be taken lightly, and if taken, must be well informed.

During this hearing season, assertion and counter-assertion has swirled around the appropriate course to pursue for submarine procurement with dueling studies and cost estimates as thick as a series of telephone books.

Both the Congressional Research Service and the Congressional Budget Office have reviewed these conflicting cost estimates in an effort to support informed decision making in Congress.

The Government Accounting Office has also looked into the merits of the industrial base and threat arguments for the SSN–23 and the New Attack Submarine.

Within the constraints of the proprietary information, the time available to analyze these very complex issues involved, we are going to look to the witnesses from these organizations to highlight the areas of dispute and agreement and provide objective assessments that hopefully will help us to separate fact from rhetoric.

Our first panel will present the Navy's position.

Ms. Slatkin, Admiral DeMars, Admiral Lopez, welcome. We look forward to gaining some insights from your presentation.

And, Secretary Slatkin, I will turn to the other members of the panel, obviously, but I will direct most of my questions to you.

And to the extent that either Admiral DeMars or Admiral Lopez, you feel that you wish to add something or if Secretary Slatkin wishes to defer to you, that of course would be completely appropriate. I will first yield to my colleague, Senator.

Senator WARNER. Thank you very much, Mr. Chairman.

That was a very fair and objective opening statement and an important one. I know, Mr. Chairman, that you and other members of the committee join me in welcoming Secretary Slatkin on what may be her last day in the Department of Defense.

You have served your country with great distinction, and we are delighted that you are going to move on to perhaps even a greater challenge.

Now, Mr. Chairman, for a number of years here in the Congress, we have been debating the issues relevant to the downsizing of our defense establishment, the defense industrial base and defense conversion. Today we will confront the cold hard reality of some of these issues.

It is relevant today, as we prepare to debate the budget resolution on the floor of the Senate, that we have the opportunity to decide whether we will face up to the challenge of spending our limited defense dollars efficiently or whether we will choose to make those critical decisions for reasons other than providing the best, least-cost defense to the American taxpayer.

Decisions driven by politics have no place today in the declining defense budgets.

I must say, Mr. Chairman, that in the more than 25 years that I have been associated with the Department of the Navy, I do not recall the department ever expending so much energy and effort on trying to justify the need for a particular source, rather than spending its time on better justifying the need for a program and leave to competition the decision for that source.

Mr. Chairman, it has been suggested that Congress should not intervene in the procurement and procedures of this New Attack Submarine, because the Navy's sole source plan is not extraordinary.

That sole sourcing is done frequently for industrial base purposes, so we are told. But, Mr. Chairman, this plan has absolutely no precedent in the history of the Department of Defense that I can find.

This plan says, in effect, that a viable, trustworthy, experienced contractor cannot come in and fairly represent the American taxpayer and bid on this contract. That is what it is, bottom line.

Where you have done sole source in the past is to help certain companies perhaps get on their legs and survive.

Newport News is on its legs. For 40 years it has provided the best quality of submarines for America's fleet. And this opportunity should not be denied to them, in my judgment, by the Congress. All we are asking for is a fair and open competition.

The decision to award a noncompetitive sole source procurement to Electric Boat for the New Attack Submarine program was considered necessary in the Bottom-Up Review process in order to maintain two nuclear capable shipyards.

As a key part of this same decision, it was considered necessary to build a third *Seawolf* to "bridge"—I put bridge in quotations—the gap at Electric Boat until the production of the New Attack Submarine program was underway.

The third *Seawolf*, SSN–23, proposed to be built solely to maintain new nuclear capable shipyards, would cost the taxpayers at least $2.4 billion.

The additional cost which would result from awarding competition for the New Attack Submarine, whether they are $1.3 billion or several more billion, as I suspect, are simply not justified for the states purposes of maintaining two nuclear capable shipyards.

Mr. Chairman, this total program of perhaps 30 new submarines will cost the American taxpayers over the years perhaps as much as $60 billion. Congress must examine this, and I am confident Congress will establish a framework for fair and open competition.

I will submit the balance of my statement for the record so that we can move forward.

I would like to also ask that the Chair include in today's record an editorial from "USA Today," which addresses this very important issue.

Senator COHEN. Senator Warner, your full statement, along with the article, will be printed in the record in full. I would just add one other comment.

My understanding is that we will flesh this out during the course of questioning, that the Navy has allocated to Newport News the sole responsibility for constructing aircraft carriers. So I am not sure whether that is unprecedented or not. But we will develop that during the course of the hearing.

Senator WARNER. I would be glad to share that responsibility with anybody who wishes to pick it up.

[The prepared statement of Senator Warner follows:]

PREPARED STATEMENT BY SENATOR JOHN WARNER

Mr. Chairman, I thank you for arranging for this hearing to be held today to address a matter of vital importance, not only to my State, but to the U.S. Navy and, indeed, to the Nation.

For a number of years, we in the Congress have been debating the issues relevant to the downsizing of our defense establishment, the defense industrial base, and defense conversion. Today, we will confront the cold, hard reality of these issues. It is relevant today, as we prepare to debate the Budget Resolution on the floor of the Senate, that we have the opportunity to decide whether we will face up to the challenge of spending our limited defense dollars efficiently—or whether we will choose to make those critical decisions for reasons other than providing the best defense for the taxpayer at the lowest possible cost. Namely, decisions driven by politics place in today's declining defense budgets.

I must say, Mr. Chairman, that in more than 25 years of my direct involvement with the Department of the Navy, I do not recall the Department ever expending so much energy and effort trying to justify from where it should obtain a new class of ships. If the Department of the Navy, along with this administration, were to expend half as much time and energy briefing and supporting the need for the New Attack Submarine as arguing about the procedure—sole source—it has been ordered to follow in acquiring these submarines, there might not be nearly as much controversy in the Congress relative to the national security justification for this new submarine program.

Finally, Mr. Chairman, it has been suggested that the Congress should not intervene in the procurement and procedures for the New Attack Submarine because the Navy's sole source plan is not extraordinary—that sole sourcing is done frequently for industrial base purposes. Mr. Chairman, this plan has no historical precedent. While there are various examples in which sole source authority has been used in the past to keep several competitors in a line of business, I do not recall a single other example where sole source procurement authority has been used to bar a ready, willing and experienced company from competing.

In this case, Newport News Shipbuilding has been designing and building nuclear submarines for the U.S. Navy for more than 40 years. This sole source procurement, if left standing, would put Newport News Shipbuilding out of new construction submarine work. Such a reason alone is sufficient to justify congressional review and intervention—intervention to protect fairness in procurement, intervention to protect fairness in competition, intervention to protect fairness for the American taxpayer.

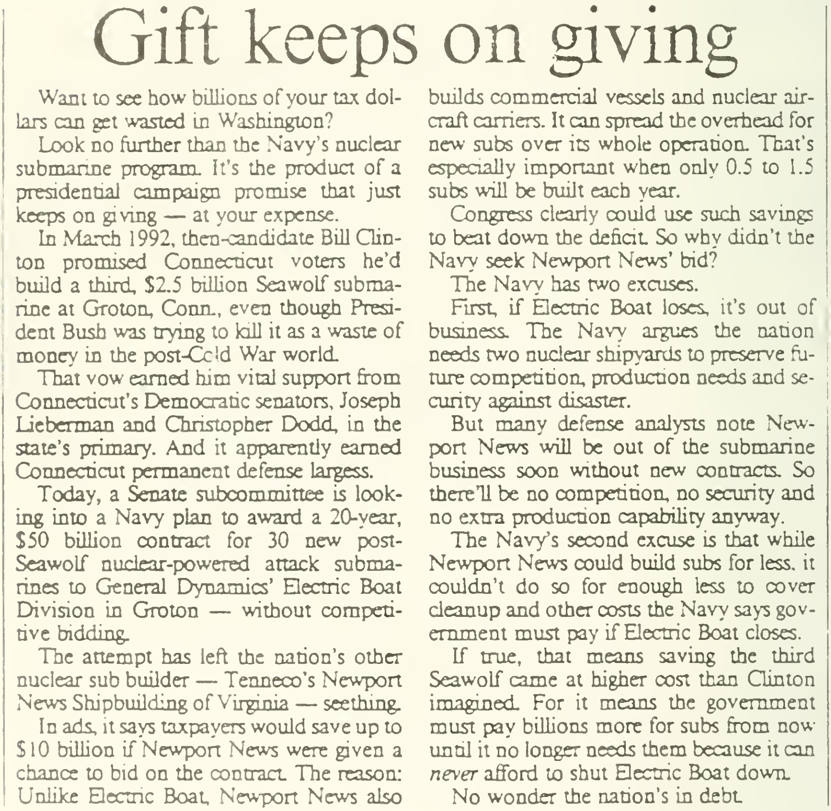
The decision to award a non-competitive, sole source procurement to Electric Boat for the New Attack Submarine program was considered necessary in the Bottom-Up Review process in order to maintain two nuclear capable shipyards. As a key part of this same decision, it was considered necessary to build a third *Seawolf* submarine to "bridge" the gap at Electric Boat until the production of the New Attack Submarine program. The third *Seawolf*, SSN-23, proposed to be built solely to maintain "two nuclear-capable shipyards" would cost the taxpayers at least $2.4 billion. The additional costs, which result from avoiding competition for the New Attack Submarine—whether they are $1.3 billion, or several more billion, as I suspect—are simply not justified for the stated purpose of maintaining "two nuclear capable shipyards".

Mr. Chairman, this total program of 30 New Attack Submarines will cost the American taxpayers, over the years, approximately $60 billion. Congress must step in now to protect the principle of competition.

The alternative before the Congress is to direct the Navy to conduct a fair and open competition for New Attack Submarines—with both shipbuilders on a level playing field. I believe that the Members of Congress and, indeed, many within the administration, know that the only way to ensure we are buying the New Attack Submarine at the least cost to the taxpayer is through a fair and open competitive process. This is what Newport News Shipbuilding has proposed. This is what I am asking my colleagues to consider. The scarcity of defense dollars requires us to do no less.

Once again, Mr. Chairman, I want to express my appreciation to you for holding this hearing and I look forward to hearing from these witnesses.

[The information follows:]



Gift keeps on giving

Want to see how billions of your tax dollars can get wasted in Washington?

Look no further than the Navy's nuclear submarine program. It's the product of a presidential campaign promise that just keeps on giving — at your expense.

In March 1992, then-candidate Bill Clinton promised Connecticut voters he'd build a third, $2.5 billion Seawolf submarine at Groton, Conn., even though President Bush was trying to kill it as a waste of money in the post-Cold War world.

That vow earned him vital support from Connecticut's Democratic senators, Joseph Lieberman and Christopher Dodd, in the state's primary. And it apparently earned Connecticut permanent defense largess.

Today, a Senate subcommittee is looking into a Navy plan to award a 20-year, $50 billion contract for 30 new post-Seawolf nuclear-powered attack submarines to General Dynamics' Electric Boat Division in Groton — without competitive bidding.

The attempt has left the nation's other nuclear sub builder — Tenneco's Newport News Shipbuilding of Virginia — seething.

In ads, it says taxpayers would save up to $10 billion if Newport News were given a chance to bid on the contract. The reason: Unlike Electric Boat, Newport News also builds commercial vessels and nuclear aircraft carriers. It can spread the overhead for new subs over its whole operation. That's especially important when only 0.5 to 1.5 subs will be built each year.

Congress clearly could use such savings to beat down the deficit. So why didn't the Navy seek Newport News' bid?

The Navy has two excuses.

First, if Electric Boat loses, it's out of business. The Navy argues the nation needs two nuclear shipyards to preserve future competition, production needs and security against disaster.

But many defense analysts note Newport News will be out of the submarine business soon without new contracts. So there'll be no competition, no security and no extra production capability anyway.

The Navy's second excuse is that while Newport News could build subs for less, it couldn't do so for enough less to cover cleanup and other costs the Navy says government must pay if Electric Boat closes.

If true, that means saving the third Seawolf came at higher cost than Clinton imagined. For it means the government must pay billions more for subs from now until it no longer needs them because it can *never* afford to shut Electric Boat down.

No wonder the nation's in debt.

Senator COHEN. Senator Robb?

Senator ROBB. Thank you, Mr. Chairman.

First of all, I would just like to comment, adding to the opening remarks of my senior colleague from Virginia.

Mr. Chairman, let me say first of all that although this might appear to be a parochial dispute in the eyes of some, I have made it very clear from the outset that if we could not justify the position that the Navy advocated or any other particular proponent advocated, I was not prepared to simply argue on the basis of sheer parochialism that one result or another ought to be obtained.

In this particular case, I have reviewed the testimony. I have reviewed all of the arguments. And with all due respect, it appears to me that the argument is something to the effect that it is critical to preserve competition. And in order to preserve competition, we must deny competition.

Mr. Chairman, that reminds me of a statement made during the course of the Vietnam War that in order to save this village, we had to destroy it.

We will have an opportunity to examine the premise of the argument that the Navy advances and that others in good fair are attempting to advance.

There is no way that we can reconcile with precision all of the dollar amounts that have been suggested by those who urge one particular course of action or another. But it seems to me that we have what is a very serious decision to make.

In another subcommittee of this committee today, a hearing is taking place to examine some very significant cost overruns and lack of accountability. It seems to me that with the number of dollars we are talking in the near term, as well in the far term, that we have an obligation to exercise our oversight responsibility with special care.

I hope that during the course of this particular committee hearing, that we will be able to do that.

I will have a number of questions, both on the record and some that I will submit for written responses at a later time. And I thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Robb.

Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman, and thank you for holding this hearing.

At the outset, I want to state that really what we are talking about here is priorities. We are talking about where we need to spend our defense dollars in an era of ever-declining defense budgets.

I remember, as the Chairman and the ranking member here and Senator Warner does, when we had briefings on the *Seawolf* back during the era of the Cold War, and I was a strong supporter of that weapon system at that time. And it is a very impressive technological marvel.

So we are really talking about where we have to spend our dollars. And in testimony before the Readiness Subcommittee, Mr. Chairman, the chiefs testify that their priorities lie in the area of strategic lift, amphibious capability, tactical aircraft and other areas which are of higher priority.

I think the other thing we need to talk about here, Mr. Chairman, is what the need is. Yes, there are intelligence reports, and they have been put forth in a very flashy document—I do not know if it goes into the cost of the *Seawolf* submarine or not by the Navy—about the capabilities that the Russians are acquiring quieter submarines.

Mr. Chairman, I am sure that is the case. I do not argue that. But anyone who observes Russia today, with their problems in Chechnya, with their economic problems, with the corruption, with all of the other problems, it boggles the mind for anyone to try to convince me or any other observer of Russia that they are pouring or intend to pour enormous amounts of their assets into quiet submarines. They are not going to do that. Their priorities are different, just as I believe ours are.

Also, Mr. Chairman, if I could, I would like to ask that this CBO letter be made part of the record. This letter was sent to me on May 15. There is going to be a great deal of comment about how we can really save money by continuing to spend money on this project.

[The information follows:]

June E. O'Neill
Director

CONGRESSIONAL BUDGET OFFICE
U.S. CONGRESS
WASHINGTON, D.C. 20515

Honorable John McCain
Chairman
Subcommittee on Readiness
Committee on Armed Services
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

In your letter of March 15, 1995, you asked the Congressional Budget Office (CBO) to analyze the budgetary impact of canceling the third Seawolf submarine and the effects of consolidating construction of all nuclear-powered ships--both aircraft carriers and submarines--at one shipyard. You also asked for an analysis of the effects of allowing the shipyards to compete to construct submarines. As agreed with your staff, this letter and the attachment provide a preliminary analysis by CBO of those issues. A more comprehensive study is under way.

Two shipyards currently produce nuclear-powered vessels: General Dynamics' Electric Boat, which produces submarines, and Tenneco's Newport News Shipbuilding, which produces submarines and aircraft carriers. The Department of Defense (DoD) has chosen Electric Boat to design and build the first New Attack Submarine (NAS) and plans to designate the shipyard to construct more of the ships. It has also chosen to produce a third Seawolf submarine at Electric Boat to ensure that the shipyard continues operating until production of the first NAS begins.

In effect, DoD initiated an industrial policy that would maintain two private-sector shipyards capable of producing nuclear-powered vessels. The policy also designated which company would produce each type of nuclear vessel for the foreseeable future: Electric Boat would continue to build only submarines, whereas Newport News would produce only aircraft carriers.

Canceling construction of the third Seawolf submarine and consolidating the production of all nuclear-powered ships at Newport News would almost surely generate both short-term and long-term budgetary savings. Canceling the third Seawolf would save about $1.5 billion in fiscal year 1996, minus $500 million in potential expenses over the next five years. For the medium and long term, current Navy plans call for producing an aircraft carrier every four years (starting in 2002) and an average of fewer than two submarines per year. At those low rates of production, paying the overhead costs associated with two separate shipyards is not particularly economical. A single larger shipyard would have the advantage of shifting workers between carrier and submarine production as needed. Of the two private-sector shipyards currently capable of producing nuclear-powered ships, only Newport News has the capital equipment and skills required to produce both aircraft carriers and submarines. Thus, when options for consolidating construction of nuclear-powered ships are discussed, the choice is always to move both types of ships to Newport News rather than to Electric Boat.

In the longer term, Newport News estimates that consolidating all construction of nuclear ships at its shipyard would save the government $7.6 billion between now and 2012. The Navy agrees that those actions would result in savings, but it estimates them at only $1.3 billion during the period. (Both estimates assume the third Seawolf is canceled.) The Navy argues that redundant submarine production facilities should be retained to accommodate increased rates of submarine construction in the event of a resurgent threat, to maintain the potential for competition in future submarine construction work, and to guard against the loss of one shipyard (for example, from a natural disaster).

Yet the Navy does not have redundant facilities to guard nuclear carriers, which are constructed only at Newport News, against such a natural disaster or even a nuclear mishap. Furthermore, Newport News officials have stated that their shipyard is capable of increasing submarine production to at least four ships a year; the Navy plans to produce an average of fewer than two submarines a year for the foreseeable future. During the 1980s, when the Navy deemed the threat substantial, no more than four nuclear-powered attack submarines were purchased in a given year. Even under a resurgent threat, the Navy is unlikely to produce submarines at a rate greater than that.

The Navy also argues for two nuclear-capable shipyards to retain the potential for competition. But letting the two shipyards compete for submarine contracts would be problematic because the Navy plans to produce submarines at such a low rate. Currently, no competition exists in submarine production because DoD plans to allocate construction to Electric Boat for the foreseeable future. At the low rates of submarine construction expected, the Navy might have difficulty sustaining competition each year between the two shipyards either now or in the future.

Yearly competition might be more expensive than consolidating shipbuilding at one yard because it would split what is already a small purchase between two shipyards and require the Navy to pay the overhead on two sets of underutilized facilities. In addition, to hold a competition, the government could incur costs to "level the playing field" between the competitors to ensure a fair competition.

As an alternative strategy, the Navy might be able to conduct a one-time "winner-take-all" competition for multiple ships or even for the entire NAS purchase. If won by Newport News, such a competition would have the same effect as consolidating all work at Newport News. If won by Electric Boat, a situation similar to the current Navy plan would arise, except with the potential for added delay and cost. Even a "winner-take-all" competition might require the Navy to spend significant sums of money to level the playing field between the competitors. One question is whether the long-term savings to the government would exceed those costs. CBO will address that issue more thoroughly in its ongoing study.

In short, if meaningful competition is not achievable at the low rates of production planned, allocating work to one of the shipyards might be the most cost-effective strategy for acquisition. Deciding now to consolidate production of carriers and submarines at Newport News rather than producing them in separate yards (the Navy plan) would eliminate the need to buy the third Seawolf, achieve economies of scale, avoid paying the fixed costs of one set of facilities, and better maintain a skilled workforce by allowing it to shift between production of the two types of ships. The Navy, however, perceives the risks of consolidation as outweighing those savings.

I hope that this information is useful. We are of course continuing our effort on the more detailed study and plan to provide you with some results from that effort by the end of June. In the meantime, we will be pleased to answer any further questions that you may have.

Sincerely,

June E. O'Neill

June E. O'Neill
Director

Attachment

IDENTICAL LETTER SENT TO HONORABLE JOHN EDWARD PORTER

OPTIONS FOR FUTURE SUBMARINE PRODUCTION

May 1995

The Congress of the United States
Congressional Budget Office

CANCELING THE SEAWOLF

With the reduced threat from Russian submarines in the post-Cold War world, DoD plans to reduce its force of submarines from 84 in 1995 to between 45 and 55 by the end of the decade and beyond. To reduce the force, the Navy is currently retiring submarines before the end of their service lives. Even with those retirements, the Navy could meet DoD's force goal without producing submarines again until at least 2003. Why does the third Seawolf need to be authorized in 1996? The Navy argues that it supports military requirements and helps to maintain the industrial base for producing submarines.

Military Value of the Third Seawolf

In addition to DoD's general force goal of 45 to 55 submarines, the Joint Chiefs of Staff (JCS) have stipulated that by 2012, 10 to 12 of those ships need to be as quiet as the Seawolf--that is, either Seawolf or NAS class vessels. Of course, other attributes, such as the quantity and quality of weapons carried and the quality of a submarine's sensors, combat system, and crew, make important contributions to its overall combat power. But the Navy has always regarded a submarine's level of quietness as an important factor in keeping it hidden from the enemy. A few of the latest Russian attack submarines are quieter at certain speeds than the Navy's existing Los Angeles (688I) class ships, and the Navy argues that it needs submarines that are quieter than those Russian ships. Both the Seawolf and the NAS--equally quiet ships--can fulfill such requirements.

Although the third Seawolf has military value and supports DoD's military requirements, the ship is not critical to fulfill them. Assuming the Navy will achieve a minimum production rate of 1.5 NASs per year beginning in 2002, it will be able to meet both the general force goal of 45 to 55 ships and the JCS requirement for very quiet submarines without buying the third Seawolf.

Effect on the Industrial Base

Although it has argued that the third Seawolf does have military value, DoD has indicated that it needs to build the ship now primarily to shore up the industrial base to produce submarines in the future. The segment of the industrial base helped most by completing the ship is submarine production at the shipyard level. DoD designated Electric Boat to build the third Seawolf to ensure that the shipyard would survive until the NAS is authorized for production in fiscal year 1998.

Apart from its benefits to the prime contractor, completing the third Seawolf submarine does little to help maintain the industrial base for the designers of submarines or for the suppliers of nuclear submarine components. Because the

Seawolf class of ships has already been designed, building the third ship no longer requires the skills of many design engineers. Electric Boat's designers have already begun working on the design for the NAS. Similarly, because the nuclear reactor for the ship is already being built with advance procurement funds, completing the vessel does little for vendors that produce nuclear components for ships and submarines. Those vendors will benefit more from the authorization of the CVN-76 aircraft carrier last year and the NAS--wherever it is produced--than they will from producing the third Seawolf.

Buying the third Seawolf will support suppliers of certain nonnuclear components, but that may not be necessary. According to a study on the submarine industrial base for DoD conducted by RAND, most vendors supplying non-nuclear components could remain viable suppliers even with a gap of several years in submarine starts.

Savings from Canceling the Third Seawolf

The Navy has requested $1.5 billion in 1996 to complete the third Seawolf. The Congress has already appropriated about $920 million to fund advance procurement of the nuclear reactor, combat system, and other components. (As of March 1995, the Navy had spent $390 million of the $920 million, leaving $530 million unspent.) Those previous appropriations bring the total cost of the ship to about $2.4 billion.

Savings in 1996 from canceling the third Seawolf would be $1.5 billion, an amount that would be offset by potential added costs of $500 million over the next five years (see Table 1). The offsetting costs would include those of shutting down production now, restarting dormant facilities, and retraining the workforce when the NAS is ready to begin production, and the impact on existing contracts. Thus, the net savings from canceling the third Seawolf would be about $1 billion.

Some or all of the $500 million in future offsetting costs and any costs for terminating contracts on the third Seawolf might be paid from the $530 million in unspent appropriations from the previous year. In this analysis, CBO did not assume that occurred, however, because these prior year funds might be spent before such costs come due.

TABLE 1. SAVINGS FROM CANCELING THE THIRD SEAWOLF (In billions of dollars)

Total Cost of the Submarine	2.4
Amount Appropriated in Previous Years	-0.9[a]
Amount Requested in 1996	1.5
Reconstitution Expenses	-0.5
CBO Estimate of Net Savings	1.0

SOURCE: Congressional Budget Office based on data from the Department of Defense and RAND

[a] $530 million of unspent prior appropriations might be used to pay any costs for terminating contracts or expenses for reconstitution of production. In its analysis, CBO did not assume that occurred because the funds might be spent before the expenses come due.

CONSOLIDATING PRODUCTION OF NUCLEAR-POWERED SHIPS AT ONE SHIPYARD

Consolidating the production of nuclear-powered ships at a single shipyard would also be likely to generate long-term savings. Newport News has given the Congress its own estimate of such savings from now until 2012. That estimate comes to $7.6 billion. The Navy agrees that some savings during that period would occur, but it believes they would be only $1.3 billion. (Both estimates assume that the third Seawolf is canceled.) The Navy also argues that the risks of cutting back to a single shipyard outweigh the likely savings.

Long-Term Savings

Consolidating production at one shipyard would eliminate excess shipbuilding capacity--particularly a second shipyard with no commercial business to help defray the costs to the government of maintaining expensive facilities and certifications to produce nuclear-powered ships. Once consolidation was completed, the Navy would need to support the fixed costs of only one private-sector, nuclear-capable shipyard--the larger Newport News. Thus, given the Navy's plan for submarine and aircraft carrier production, those economies of scale are likely to become important.

In addition, Newport News could achieve efficiencies by shifting its workforce between carrier and submarine work. Building military ships to strict government specifications requires a skilled workforce. According to the RAND study on the submarine industrial base, most of the skills required to build a submarine are the same as those needed to produce or overhaul a carrier. Over the longer term, with the low rates of carrier and submarine production, a flexible workforce at one shipyard that could shift between carrier and submarine production might help retain a stable, skilled workforce more effectively and at less cost than separate workforces for carriers and submarines

Also, if the third Seawolf is canceled and the construction of the NAS is delayed, reconstituting production at Newport News is likely to be less expensive than doing so at Electric Boat. If the ship is canceled in 1996, submarine production would have to be shut down and reconstituted later when NAS production begins. Reconstitution in 1998 would cost about the same at Newport News and Electric Boat, but the larger yard's cost advantage would increase if reconstitution was delayed.

The cost advantage at Newport News would result from its ability to shift its workforce from the CVN-76 aircraft carrier to the NAS. (The RAND study states that the costs of finding, rehiring, and retraining a skilled workforce dwarf all other costs of reconstituting submarine production.) Although current Navy plans call for NAS production to begin in 1998, delays in programs of this size are not uncommon. Exploring and defining the concept for the basic design of the ship took a year longer than planned and thus might affect the schedule for production. In addition, an internal Navy memorandum in the fall of 1994 states that the Chief of Naval Operations was willing to delay production of the NAS to fund programs of higher priority, which might indicate the Navy's willingness to do so in the future. Thus, reconstituting submarine production might well be delayed.

Short-Term Costs

Although consolidating construction at Newport News would save money over the long term, it might entail some short-term costs. The Navy and Newport News disagree about the level of those costs Electric Boat is designing the NAS to be produced in its own facility. The Navy estimates that it would cost about $200 million and take two to four years to redesign the ship so that it could be produced at Newport News. Alternatively, the president of Newport News claims that such costs would be negligible because the boat is still in the early stages of design, and modern design tools (computer-aided design systems) make redesign much easier and cheaper. Both shipyards have those tools. In its final report, CBO will analyze that issue more thoroughly.

Maintaining the Industrial Base

The Navy is concerned that any significant delay in the NAS program could endanger the industrial base for suppliers of submarine components. If redesign caused a significant delay, the Navy might need to take some action to ensure the survival of those vendors. According to RAND, it might keep them in business by funding items before the items were needed, paying them to build prototypes, or using them to revitalize, modernize, or replace equipment on existing submarines. According to the General Accounting Office, if key vendors went out of business, the cost and time to reconstitute production could be reduced by having the government or the shipbuilder take over production, as Newport News did with torpedo tubes.

Risks of Consolidating Production

The Navy argues that the risks imposed by consolidating to a single nuclear-capable shipyard outweigh the potential cost savings. It maintains that two yards to build submarines are needed to hedge against the possibility of losing a shipyard (for example, from a natural disaster) or to increase rates of production if the threat increases dramatically. If a second yard--Electric Boat--was needed and had already closed, the Navy argues that it would be difficult and time-consuming to get it recertified to build nuclear-powered ships.

Also, the Navy is reluctant to lose Electric Boat because it regards it as the preeminent yard in the United States for nuclear submarine design and construction technology. In particular, it notes that the shipyard designed the nuclear propulsion plants of 18 of the last 19 classes of submarines and provides design, engineering, production, and fleet support for the Seawolf and the Trident ballistic missile submarine programs.

But, in fact, only one yard--Newport News--produces nuclear-powered aircraft carriers. Therefore, the Navy has no redundant capacity to build nuclear carriers in the event of a natural disaster or even a nuclear mishap. That situation existed even during the Cold War when the threat was greater. Arguably, with the decline of the threat from Russian submarines in the post-Cold War world, producing submarines might be less critical than producing carriers, given the shift in U.S. naval strategy to projecting power ashore in coastal areas and the need for weapon systems that provide maximum capability in those areas. Therefore, one shipyard capable of producing carriers and submarines might now be sufficient.

More important, Newport News has a maximum capacity to build at least four ships per year. In the long term, assuming that the average expected life of a submarine is 30 years, the capacity to build four ships a year could support a steady-state force of 120 attack submarines--a fleet exceeding that of the later Cold War years (a maximum of about 100 ships). Thus, the capacity to build four submarines a year would meet most plausible scenarios postulating a resurgent submarine threat.

Finally, although Electric Boat designed the power plants for 18 of the last 19 classes of submarines, Newport News designed the power plant of the modern Los Angeles (688) class submarine that is still in production. If Electric Boat's design capability is a major reason the Navy continues to operate the shipyard, perhaps a more economical solution is to retain that function and close the production facilities.

CONSOLIDATION VERSUS COMPETITION

According to the Navy, another risk of consolidating production at one shipyard is eliminating the possibility of future competition to build submarines. Currently, however, no competition exists to build submarines because the Navy plans to allocate their design and production to Electric Boat for the foreseeable future. The Navy maintains that its plan to allocate production of the third Seawolf and the design and production of at least the first few NAS vessels to Electric Boat was necessary. By way of explanation, it claims building submarines at an average rate below two per year initially would not sustain competition between two shipyards. But sometime after the turn of the century, the Navy hopes to increase production to two ships per year; it argues that a competition might then be held. The potential for future competition, it contends, ensures leverage over Electric Boat to keep the cost of the ships down in the interim.

Newport News contends, however, that if the Navy continues to designate Electric Boat to build submarines while it builds none, its capacity to produce them will erode. Therefore, in the future, the Navy would continue to incur the fixed costs of two nuclear-capable shipyards--one capable of producing carriers and one capable of producing submarines--without reaping the cost savings of having two potential suppliers of submarines. Thus, the Navy's current plan might leave it without the possibility of generating competition in the future and the leverage to hold down costs in the interim.

Furthermore, prospects for competitive procurement of submarines either now or in the future are questionable. First, the Navy may never produce submarines at two per year. Even though the NAS is being advertised as a low-cost successor to the Seawolf, the first ship of the class is projected to cost $3.3 billion to procure. That price is almost a billion dollars more than the third Seawolf, which costs about $2.4 billion. Although the cost of the lead ship in any class is greater than follow-on vessels, and the Navy eventually hopes to get the unit cost down to $1.5 billion, it may have difficulty closing such a wide gap. If the Navy cannot reduce unit costs substantially, it may not be able to afford to produce two ships per year.

Second, according to an analysis by the Congressional Research Service (CRS), even if two submarines a year are produced, sustaining competition between the two shipyards may not be realistic. For fiscal years 1994 and 1995, the Navy decided that a production rate of three ships a year would not sustain competition between the two shipyards producing DDG-51 destroyers without risking their financial health. Therefore, prospects would be limited for competition for submarines at an even lower rate of production.

The CRS analysis also notes that even if competition for submarines could be sustained, the Navy might not necessarily save money. The inefficiencies from splitting the production learning curve between the two shipyards might more than offset the savings from competition. The analysis suggests that to avoid the added expenses of dividing a small purchase of submarines between two shipyards, a winner-take-all competition for multiple ships or the entire NAS purchase could be held In that instance, a one-time competition, rather than government industrial policy, would decide whether one or two nuclear-capable shipyards remained. In question is whether a shipyard would bid extremely low to win the contract and then raise the price after the losing shipyard left the submarine production business. Also, would the long-term savings from a winner-take-all competition exceed any short-term costs to the government to level the playing field between the two shipyards? CBO's formal report will analyze that issue quantitatively.

The CRS analysis lists some of the actions that might be needed to make competition more equitable. The Navy might have to fund a Seawolf or some other submarine construction project in 1996 at Newport News as well as Electric Boat to ensure that Electric Boat did not enjoy an advantage. (Newport News maintains, however, that it could resume submarine production in 1998 if it was given some submarine overhauls and repair work now performed by Navy shipyards.) The analysis suggests that if no construction project was funded at Newport News, the shipyard's reconstitution costs might have to be considered during the bidding.

In addition, because Electric Boat is designing the NAS to be produced at its facility, the analysis notes that Newport News would have to be allowed to observe or participate in the design process and that the design would have to be modified to permit Newport News to produce it. As noted earlier, the Navy estimates that altering the design would cost about $200 million and delay the NAS program by two to four years. However, Newport News argues that the extra costs and time are negligible.

In short, with competition, the possibility exists that the Navy could spend substantial amounts of money to level the playing field. Whether long-term savings from competition would exceed those amounts is unknown. Also, of course, if the competition was winner-take-all and Newport News won, the Navy would end up with only one shipyard that could produce nuclear-powered ships anyway. If Electric Boat won, a situation would arise like that under the current Navy plan, except with the potential for delay and increased cost.

SUPPLEMENTING WITH WORK FROM THE PUBLIC SHIPYARDS

If consolidating production at one shipyard--either by an industrial policy or as a result of competition--was thought to be too risky, both shipyards could be kept open and supplemented with work reallocated from four public Navy shipyards that are nuclear capable. Reallocating some submarine overhauls from public to private shipyards would allow the private yards to spread overhead among more contracts, help keep their skilled workforces more efficiently employed, and eliminate excess naval industrial capacity as some or all public yards were reduced or closed.

Senator McCain. And if I could just quote, Mr. Chairman, "Canceling the third *Seawolf* would save about $1.5 billion in fiscal year 1996 minus $500 million in potential expenses over the next 5 years."

Mr. Chairman, that is from the Congressional Budget Office, not from anybody who has a dog in that fight.

Finally, Mr. Chairman, later on, we will hear from the General Accounting Office, as you know, which I think has very important testimony.

The opening part of their statement reads, "First, there are less costly alternatives than the approach the Navy has chosen to maintain the required SSN force structure. The SSN–23 is not needed to satisfy force structure requirements or to provide the 10 to 12 *Seawolf* quiet submarines required by the JCS by the year 2012 because of the New Attack Submarines.

"Instead, the Navy's justification for its two nuclear capable shipbuilder strategy was to preserve the benefits of competitive leverage and the option for future competition when production rates are stable, to provide a hedge against future uncertainty, and to prevent the irreversible consequences of losing a shipbuilder."

Mr. Chairman, I was informed by General Dynamics, they were kind enough to tell me, that there are $61 million worth of contracts in the State of Arizona, which I think is very astute, since I am sure there are millions of dollars of contracts throughout the country.

I believe that our question is not which shipbuilder makes the ship and not whether competition is there or not, but the first question that this committee and the Congress of the United States has to answer is whether we need to spend this kind of money on this weapon system—by the way, 41 percent of the entire shipbuilding budget; 41 percent will be this one submarine—and whether our priorities are in order.

In a perfect era, when we have unlimited amounts of money, perhaps in the eighties, I would be one of the strongest supporters. But we have to make tough choices.

And when we are talking about that percentage of our shipbuilding budget being devoted to one weapon system, I come down on the side, unfortunately, no.

I thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator McCain.

Senator Lieberman.

Senator LIEBERMAN. Thank you, Mr. Chairman.

I join you in greeting Secretary Slatkin.

And I would say for the record that I have always had a lot of respect for John Deutch up until this morning. I have had undiluted affection for him, too.

But my feelings are mixed now that he is taking Secretary Slatkin from the Navy where I think she has done an extraordinary job. And I know she will continue that high level of service at the CIA.

Mr. Chairman, as we can see from the opening statements and as you foretold in your excellent opening statement yourself, this is a controversial matter we are dealing with. It is in some measure understandably a competition between two businesses that are looking for business.

And it is in another sense understandably the effort of many in Congress, including some of us on the committee, to support those businesses insofar as they are located in our states.

But it is ultimately, and most important, a discussion of what is necessary to protect our national security in the decades ahead.

I believe there is a consensus in Congress that we need to build more submarines, even at the Bottom-Up Review level of an attack submarine fleet of 45 to 55, just by the nature of expiration of the life span of the subs that we have out there, we need to build new subs.

The question is how do we get there and who builds them. Clearly, we have a question to answer here today about whether the SSN–23 is an important link to building those additional subs and an important step in producing one of those additional subs that we need.

And the second key question, obviously, is who builds the next generation of subs.

Mr. Chairman, I think the other fact that we all do agree on, although based on the statement of my friend from Arizona, we may have different conclusions about it, is that the Russians are investing an extraordinary amount of money in building submarines.

Let me begin with an earlier statement. Whether the publication is slick or not, the fact is that Naval Intelligence has presented testimony, made conclusions, which are validated by everybody who looks at them, including the gentleman from CRS, whom we will hear from later, that the Russians have quieter subs in the water than we have today, and that our subs are having trouble finding them.

That is a serious fact, and that is a fact that we have to deal with, that the *Seawolf* and the follow-on New Attack Submarines will deal with.

Why are they investing this kind of money while the rest of their military seems to be atrophying? Well, you can take your favorite theory, and we will hear some as the day goes on. Again, Mr. O'Rourke has some.

But it seems to me that they have decided that based on technological changes that affect the nature of warfare, that submarines, because of their stealth, as well as the extraordinary range of capabilities they have not only to perform the traditional attack functions but now to perform in shallow waters, to perform intelligence work and, most significantly, to fire cruise missiles, to achieve results from a stealthy platform that have traditionally been achieved from much less stealthy platforms, including aircraft carriers.

And I think the judgment the Russians have made is one that our Navy is making, which is that this is an extraordinarily cost-effective investment.

And Minister of Defense Grachov is quoted in that statement by the Office of Naval Intelligence Office as saying, and I am paraphrasing, but that nuclear attack submarines that attack submarines, high tech submarines, are going to be at the core of any great nation's national security structure in the years ahead.

And I think that is something that we have to use as a basis of our judgment and go on from there.

Now, Mr. Chairman, the truth is that the Navy has been active in advocating a course to follow here, but this is the judgment of people in uniform.

And it is held from everybody I have talked to right up to the top of the Defense Department, including not only the Secretary but the Chairman of the Joint Chiefs.

And I have no reason to question the motivations. It seems to me that the job that we have put them in for uniform to do and to counsel us on is what is best to protect our national security. And I assume that they are advocating this position because they feel that will do it.

So I look forward to the testimony, understandably controversial. It will undoubtedly get heated today, but I just hope that we will keep our eye on the target here, which is what is going to be best and most cost effective in protecting the security of the American people, not this year, not next year, but 10, 20, 30, 40 years out, when these attack submarines, including the SSN–23 that we are debating, will still be in the water for us.

Thank you, Mr. Chairman.

Senator COHEN. Thank you very much, Senator Lieberman. Senator Lott?

Senator LOTT. Thank you, Mr. Chairman, and thank you for having this very important hearing.

Obviously, this is going to be an area where we are going to have to give a lot of attention, and there is going to be some controversy to say the least.

I have felt for years that the Navy quite often has become too occupied with submarines. And when I look at a budget that has 51 percent of all new construction for submarines, I really have to question that.

On *Seawolf* itself, I have gone both ways. I really questioned a couple of years ago whether or not we still needed that. I bought some of the arguments last year on what we had already done, that maybe the cost that had already been put into it justified going ahead with it.

But I have to say, when you look at the budget numbers—and I have been sitting on a budget resolution, and when a mistake is being made by the administration, and a mistake was made, in my opinion, by the Senate Budget Committee to allow the numbers to continue to slide down to 255 2 years from now, I just do not see how there is enough room for all the things that we are being asked to fund and still do what we must do.

And so I am going to look anew at this question of *Seawolf*. I also am very much concerned about sole sourcing of submarines.

So I have not made a final decision, but I will look forward to hearing from Secretary Slatkin and both of our admirals this morning.

Thank you, Mr. Chairman.

STAFF. Forty-one percent.

Senator LOTT. Well, it is 51 percent of new construction, I believe. Is that not right?

STAFF. Well, you had 49——

Senator LOTT. Well, it is very substantial.

STAFF. There is a difference of opinion here in numbers.

Senator LOTT. Well, we will clarify that percentage. It is 41—it is 51 for new construction, I think.

Senator COHEN. Secretary Slatkin, if you would proceed. I am advised that we have a vote starting, I believe, at 10:30 this morning, and that may cause a good deal of interruption during the course of the morning.

So if you could proceed and summarize your testimony as best as possible. It is fairly lengthy. There are a lot of issues to cover, and perhaps we will bring out most of them during the course of the questioning.

STATEMENT OF HON. NORA SLATKIN, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT AND ACQUISITION

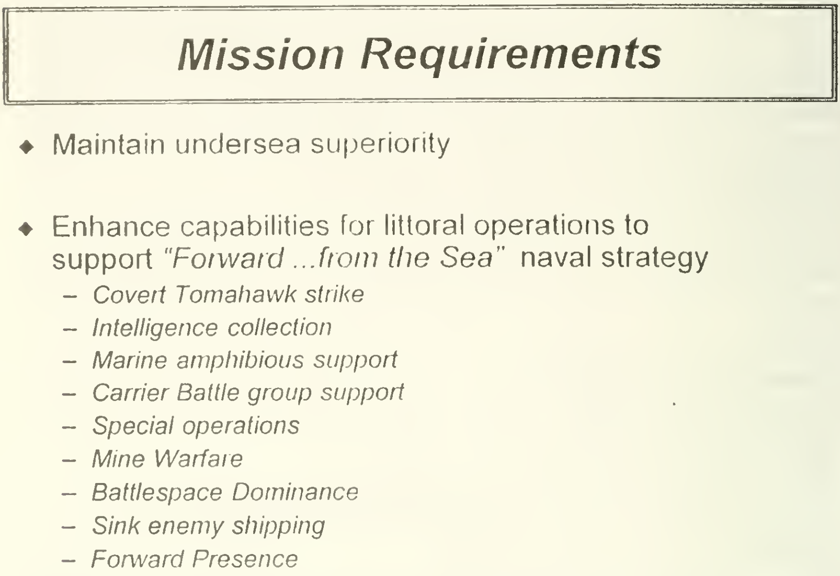
Ms. SLATKIN. Mr. Chairman, members of the subcommittee, thank you very much for the opportunity to appear before you to discuss the Department of the Navy's submarine modernization plan.

NAVY SUBMARINE RECAPITALIZATION PLAN

I am pleased, as you mentioned, Mr. Chairman, to be accompanied by Adm. Bruce DeMars, who is available to talk about naval nuclear propulsion issues, and Vice Adm. Joe Lopez, who is here to talk about the Navy's operational requirements.

I would like to brief you on our submarine recapitalization plan, a plan that has been under development and discussion for 4 years. A plan that culminates with major funding decisions before you this fiscal year. I would like to break this discussion into three parts.

First, I would like to talk about our requirements. Second, I would like to talk about important near-term decisions. And finally, I would like to talk about how our plan executes the national policy decision to retain two nuclear capable shipbuilders.



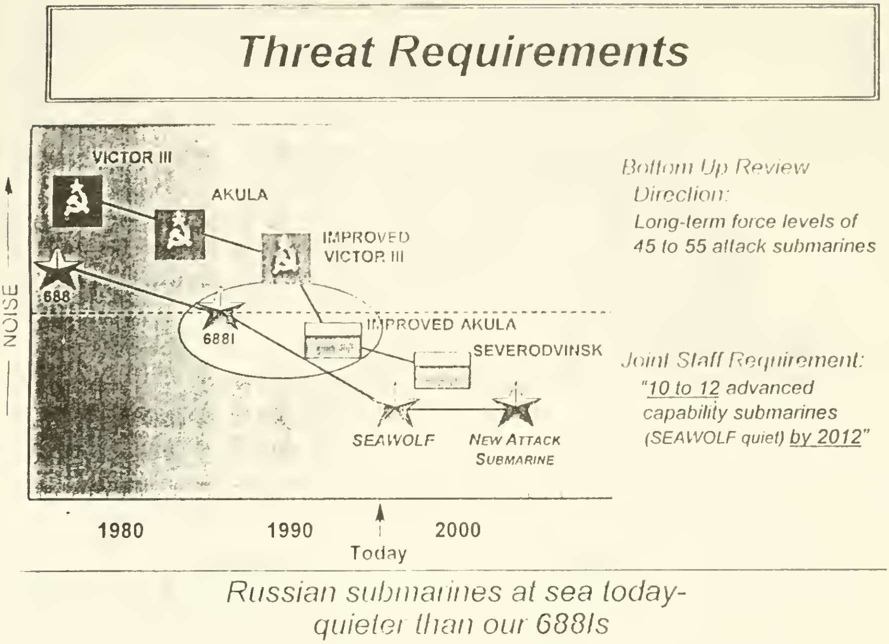
Mission Requirements

- Maintain undersea superiority
- Enhance capabilities for littoral operations to support *"Forward ...from the Sea"* naval strategy
  - *Covert Tomahawk strike*
  - *Intelligence collection*
  - *Marine amphibious support*
  - *Carrier Battle group support*
  - *Special operations*
  - *Mine Warfare*
  - *Battlespace Dominance*
  - *Sink enemy shipping*
  - *Forward Presence*

Our *Forward . . . From the Sea* naval strategy imposes requirements on our attack submarine force. First and foremost, we must maintain our undersea superiority, a long-standing dominance that we have enjoyed as a nation, yet one that is becoming more challenging to preserve with the changes in the world.

Covert Tomahawk launches, intelligence collection, surveillance, Special Operations, Marine amphibious and battle group support, and mine warfare are all mission capabilities of growing importance for our submarines in littoral regions around the world

With a much leaner submarine fleet, multi-mission versatility must be an inherent quality in the new submarines that we build for the future as we face tomorrow's warfare challenges. The challenge of maintaining undersea superiority and multi-mission effectiveness is compounded as you look at the changes in the world threat.



Threat Requirements

Bottom Up Review Direction:
Long-term force levels of 45 to 55 attack submarines

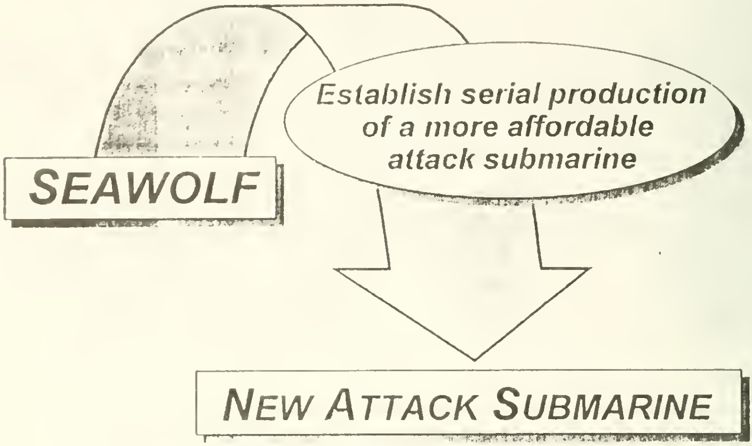
Joint Staff Requirement:
"10 to 12 advanced capability submarines (SEAWOLF quiet) by 2012"

Russian submarines at sea today-quieter than our 688Is

As this slide vividly shows you, there are about half a dozen Russian submarines that are operational today that are quieter than our Improved 688s. This is an historic first and, frankly, one that we are very determined to turn around.

In light of these mission requirements and the advances in both nuclear and modern diesel submarines, the Bottom-Up Review directed a force structure and agreed-upon a force structure of 45 to 55 attack submarines. In addition the Joint Chiefs of Staff have required that the Navy have 10 to 12 submarines with a *Seawolf*-like stealth capability operational by the year 2012.

Navy Response



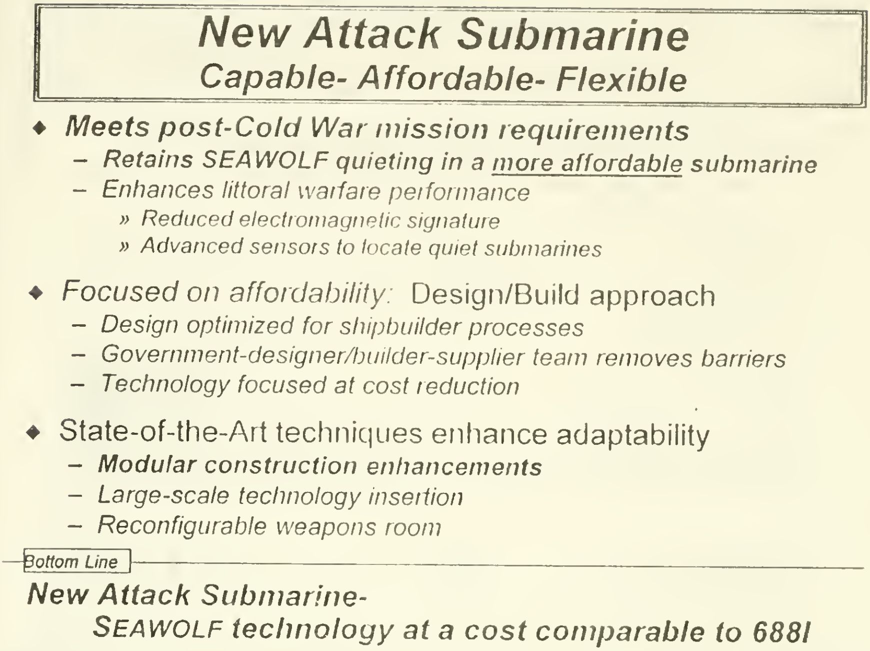
Establish serial production of a more affordable attack submarine

SEAWOLF

NEW ATTACK SUBMARINE

Capable -- Affordable -- Flexible

Our long-term answer to our needs is clearly the New Attack Submarine. Our near-term strategy is how to establish affordable, serial production of this submarine rapidly as possible. We know where we are headed with our attack submarine program. The question is how best to get there.



New Attack Submarine
Capable- Affordable- Flexible

- ***Meets post-Cold War mission requirements***
  - *Retains SEAWOLF quieting in a more affordable submarine*
  - *Enhances littoral warfare performance*
    - » *Reduced electromagnetic signature*
    - » *Advanced sensors to locate quiet submarines*
- *Focused on affordability:* Design/Build approach
  - *Design optimized for shipbuilder processes*
  - *Government-designer/builder-supplier team removes barriers*
  - *Technology focused at cost reduction*
- State-of-the-Art techniques enhance adaptability
  - ***Modular construction enhancements***
  - *Large-scale technology insertion*
  - *Reconfigurable weapons room*

Bottom Line

New Attack Submarine-
SEAWOLF technology at a cost comparable to 688I

The New Attack Submarine, in our view, is the right warship for the future, and there are basically four reasons why.

First, it is deliberately designed for the post-Cold War environment. Second, it is deliberately designed to be affordable. Third, it is designed to be mission adaptable and adaptable to future technology insertion. And fourth, it is designed to be all those things at once: affordable, multi-mission capability, as well as adaptable for future technology.

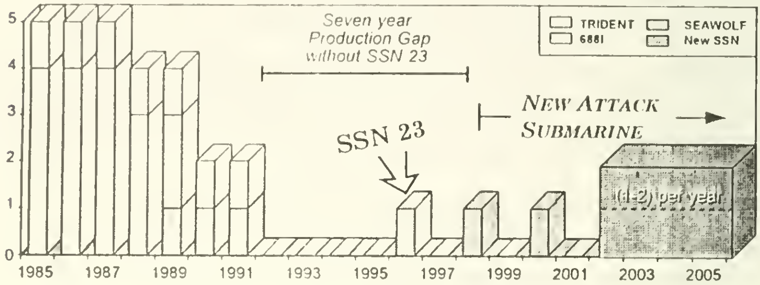
The New Attack Submarine will deliver *Seawolf* technology at a cost that is relatively comparable to an Improved 688. It will be cheaper because we focused on affordability at the front end of the design process.

That is a point I want to make to you. It is not that we focused on performance only, which is what we have done on the past. We have focused on affordability at the very front end in the design process for the New Attack Submarine.

The bottom line is that we believe with the New Attack Submarine we have achieved the best balance possible between cost and capability.

First Challenge: Addressing the Production Gap

SSN 23: A crucial "bridge" to affordable low rate production of New Attack Submarine



High Rate Production	*Transition Period*	Low Rate Production

The challenge that we face, though, is how to best get to the New Attack Submarine. As all of you know, our last submarine was authorized by the Congress in 1991, and we will not request the first New Attack Submarine until fiscal year 1998.

Unless we do something about that, we cannot get from here to there. We have looked exhaustively at all of the alternatives.

Our analyses in the Department of Defense has pointed to one solution that we believe is the best solution for our near-term, as well as our long-term affordability of the overall program.

This one satisfies our current Navy needs and accommodates our industrial base concerns; that is, to use the SSN–23 as a production bridge. This decision does a number of very good things for us.

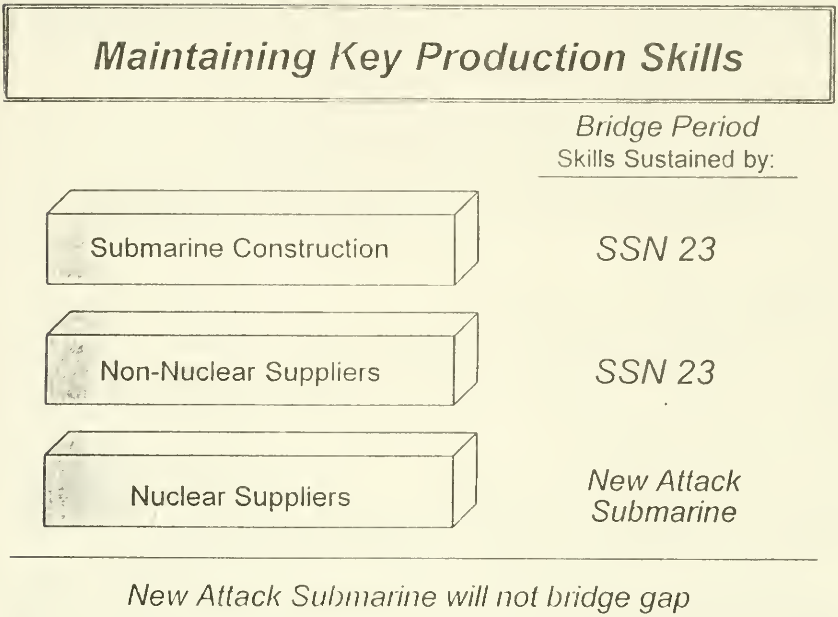
It maintains two nuclear capable shipbuilders, preserving vital national resources. It also provides us a submarine for the money.

It is not just any submarine, but one whose capabilities are needed today, capabilities that address the growing diesel submarine threat, as well as counter quieter Russian submarines that challenge our undersea superiority.

It has been said by some that the Navy Department does not need this particular warship because we can still deliver ten submarines with the right capabilities by the year 2012 without SSN–23. But the fact is we need the submarine with the capability at sea today. We currently have none.

Maritime superiority is just as important to this nation in the year 2004 as it is in the year 2012. Our plan has the advantage of delivering you that needed warship. No other alternative does that.

Most importantly, I believe that building the SSN–23 represents the least risk to the nation's capability to continued production of nuclear submarines.



Maintaining Key Production Skills

	Bridge Period Skills Sustained by:
Submarine Construction	*SSN 23*
Non-Nuclear Suppliers	*SSN 23*
Nuclear Suppliers	*New Attack Submarine*

New Attack Submarine will not bridge gap

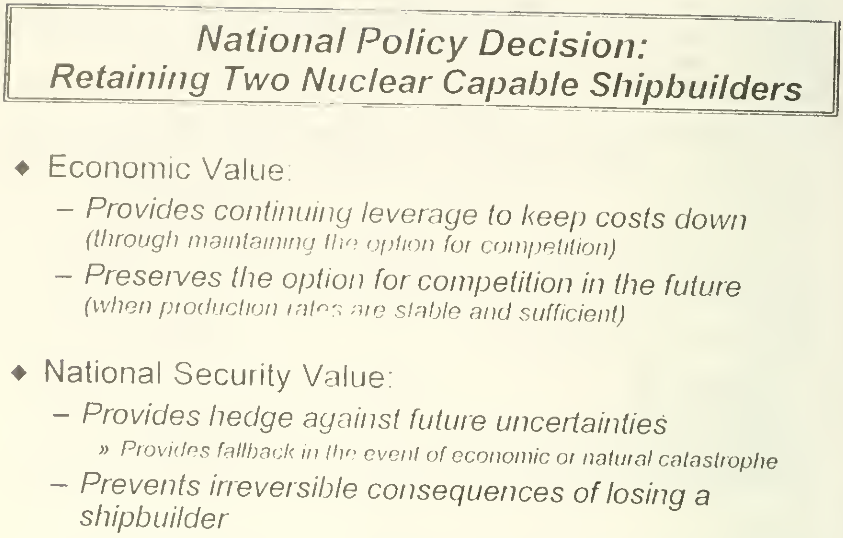
During the transition period, the New Attack Submarine supports, as you can see from this slide, all vital categories of design work, and it supports the nuclear component suppliers.

What it does not support, though, is the preservation of submarine construction skills and non-nuclear component manufacturing skills. These are "use-them-or-lose-them" skills.

It makes most sense to us to use them building a new submarine. This is true for the shipbuilder. It is also true for the suppliers. Developing the skills needed to restart production is very expensive, and it is very high risk.

These skills, as you know, are unique and perishable unless they are exercised through the actual practice of submarine shipbuilding.

Reestablishing proficiency is a difficult and time-consuming process. Completing the SSN–23 sustains these skills needed for safety and reliability while averting the risk of retraining our nuclear certified work force.



National Policy Decision: Retaining Two Nuclear Capable Shipbuilders

- Economic Value:
  - *Provides continuing leverage to keep costs down*
    (through maintaining the option for competition)
  - *Preserves the option for competition in the future*
    (when production rates are stable and sufficient)
- National Security Value:
  - *Provides hedge against future uncertainties*
    - » *Provides fallback in the event of economic or natural catastrophe*
  - *Prevents irreversible consequences of losing a shipbuilder*

The Navy plan not only provides you the most stable and cost-effective transition to the New Attack Submarine, but it also supports our position to retain two nuclear capable shipbuilders.

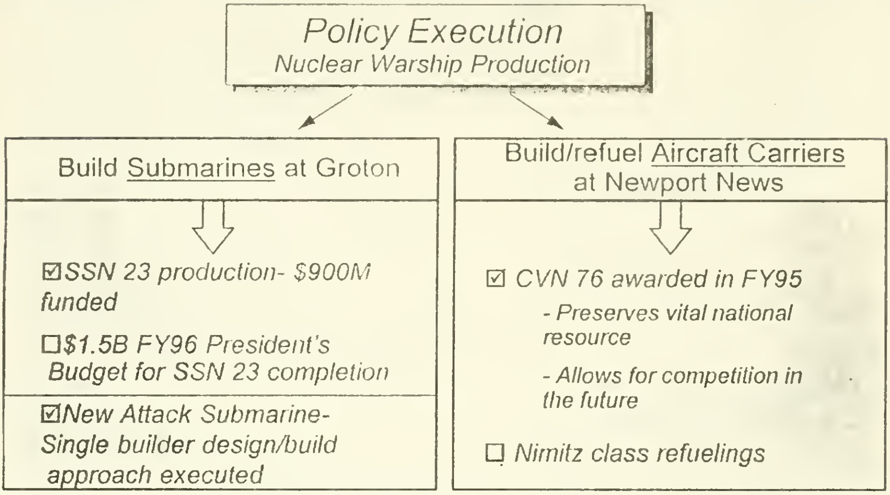
This policy has several advantages, and we tried to depict them on this slide for you. It provides invaluable leverage that comes with the option of future competition.

Without the Groton shipbuilder, we forfeit the ability to compete later.

This strategy also makes sense as a hedge against an uncertain future. One thing that is certain is that we have never brought back a nuclear capable shipyard once we have shut it down.

And the certainty is that both Dr. Perry and Dr. Deutch, when Dr. Perry was the Deputy Secretary of Defense, believed that that was an important factor and the reason for sustaining two nuclear capable yards, the risk and the cost of bringing back a shipbuilder once we had shut that builder down.

Current Implementation Status



Policy Execution
Nuclear Warship Production

Build Submarines at Groton

- ☑ *SSN 23 production- $900M funded*
- ☐ *$1.5B FY96 President's Budget for SSN 23 completion*
- ☑ *New Attack Submarine- Single builder design/build approach executed*

Build/refuel Aircraft Carriers at Newport News

- ☑ *CVN 76 awarded in FY95*
  - *- Preserves vital national resource*
  - *- Allows for competition in the future*
- ☐ *Nimitz class refuelings*

This slide shows you how we will execute our policy of maintaining two nuclear capable shipyards. This is the Department's policy that we are trying to propose to you.

In this regard, Newport News will build carriers. A key step in that strategy is the award of CVN–76 that we awarded after you authorized and appropriated the funds last year. In addition to building carriers, we will do all of the nuclear carrier refueling and overhaul at Newport News.

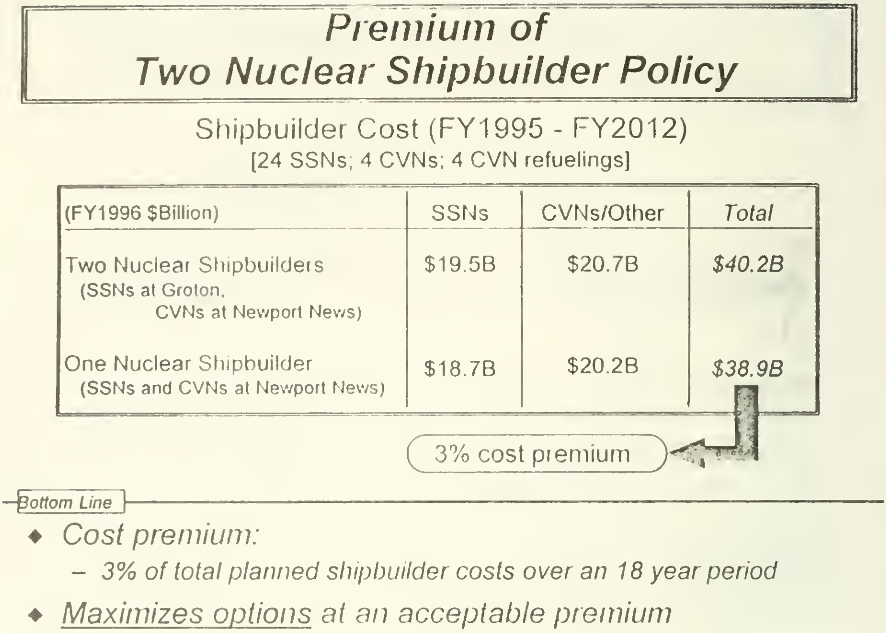
At the Groton shipbuilder, we are capitalizing on our integrated design/build approach for the New Attack Submarine. In this regard, we will provide a single point of accountability for the design effort on New Attack Submarines.

Now I must confess to you, at a much earlier stage, because of the decision in the Bottom-Up Review, we were able to execute our design work with the Groton shipbuilder. This means that we can design the submarine to be more affordable and more produceable.

It is using the techniques that are employed in the commercial industry that Boeing is employing with its efforts to build 777 aircraft. It is building a partnership with a design team and a production team early on so you can focus on affordability and producibility.

This concept is new in the Navy Department. It is new in shipbuilding, but it is what is being used in our commercial industry and has been for some time.

Members of the design team and the building team, as well as key vendors, are collocated, working through the design issues, making sure we understand the cost. And, we see great benefit. This is the way to build affordability into our future submarines.



Premium of Two Nuclear Shipbuilder Policy

Shipbuilder Cost (FY1995 - FY2012)
[24 SSNs; 4 CVNs; 4 CVN refuelings]

(FY1996 $Billion)	SSNs	CVNs/Other	*Total*
Two Nuclear Shipbuilders (SSNs at Groton, CVNs at Newport News)	$19.5B	$20.7B	*$40.2B*
One Nuclear Shipbuilder (SSNs and CVNs at Newport News)	$18.7B	$20.2B	*$38.9B*

3% cost premium

Bottom Line

- *Cost premium:*
  - *3% of total planned shipbuilder costs over an 18 year period*
- *Maximizes options at an acceptable premium*

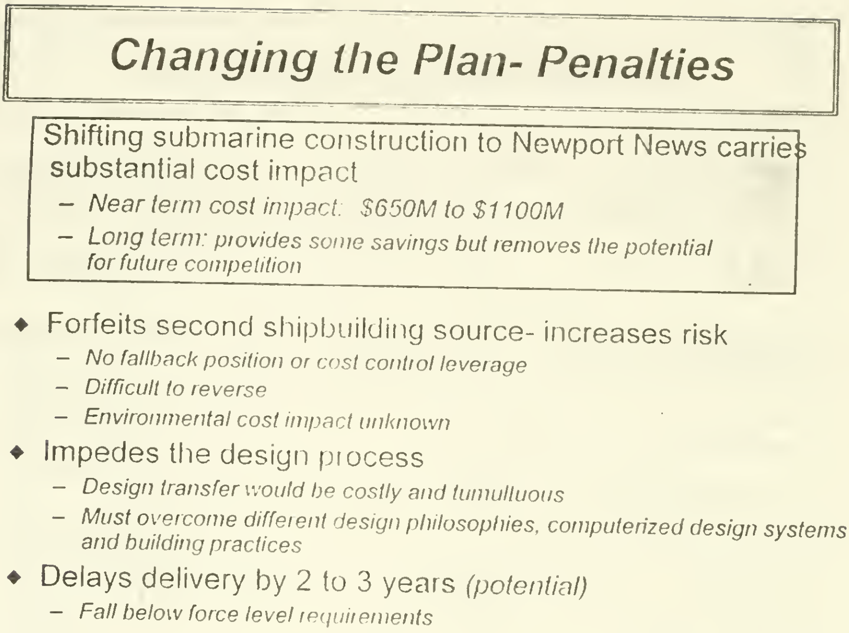
Changing the way we are doing it will no doubt increase program costs. Much discussion has been generated by proposals that talk about building submarines cheaper. Our position has been consistent throughout the debate, and that has been that we have the most cost-effective approach. We have never said it is the cheapest in all cases, but we believe it is the most cost effective.

We acknowledge there is a cost premium of sustaining two new nuclear capable shipbuilders. There is no doubt about it. I would argue to you, however, that it is an acceptable premium given the benefits.

We recently completed an assessment, which we have attached to the prepared statement for you, of what that premium might look like. As you can see, over a span of 18 years the difference is about three percent of the total cost. That is roughly the premium that we are paying for this policy judgment of sustaining two nuclear capable shipbuilders.

I believe it is also interesting, if you look at the slide a little differently, that you can see over the 18-year period about half of the work is in carriers and carrier overhauls. The other half of the work is in submarine construction.

We believe that paying this premium of about three percent is worth the price, because it preserves the option for future competition. We have taken a look at the costs and the risks of alternatives to our plan.



Changing the Plan- Penalties

Shifting submarine construction to Newport News carries substantial cost impact
  - *Near term cost impact: $650M to $1100M*
  - *Long term: provides some savings but removes the potential for future competition*

◆ Forfeits second shipbuilding source- increases risk
  - *No fallback position or cost control leverage*
  - *Difficult to reverse*
  - *Environmental cost impact unknown*

◆ Impedes the design process
  - *Design transfer would be costly and tumultuous*
  - *Must overcome different design philosophies, computerized design systems and building practices*

◆ Delays delivery by 2 to 3 years *(potential)*
  - *Fall below force level requirements*

We have closely examined the impact of shifting submarine production to Newport News. We believe it will cost anywhere from $650 million to over $1 billion, if you look at all of the costs.

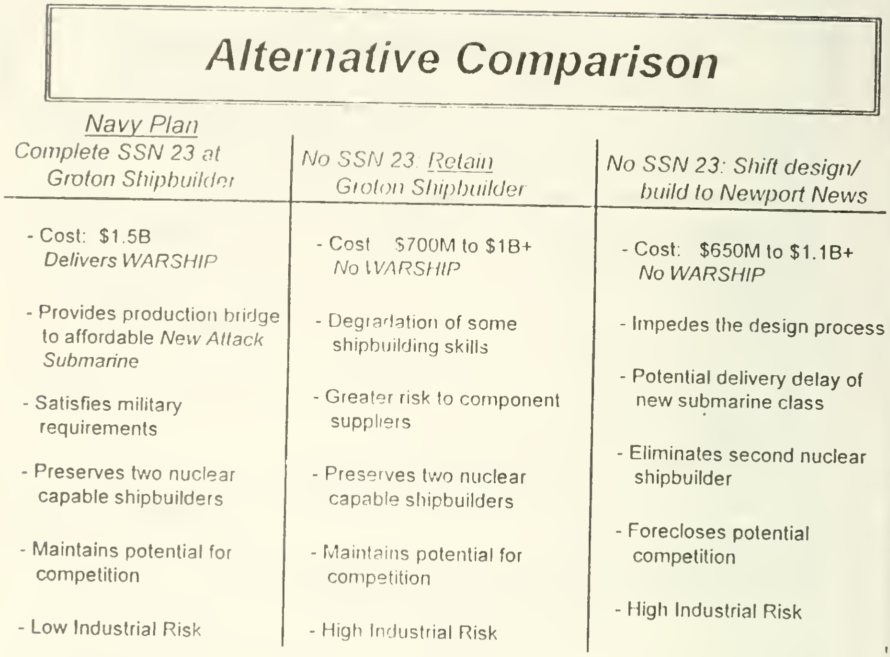
Obviously, these are estimates, and we all understand that estimates are just our best available information at this time. I want to make the point that we have looked at the cost and believe that it is in the range of $650 million to $1 billion when you account for closing down the shipbuilder, as well as disruption and transfer of the design to another designer.

Shifting the design is frankly an involved and a costly process. At a minimum, we have to overcome the substantial differences in the design philosophies between the two yards and their systems and practices.

This action will change our current plan and will no doubt undermine the progress that we have made so far.

Finally, I want to make one other point about shifting the design. If we do it during the design phase, that is if you were to ask us to shift the design during this phase, my best sense is what we would have to do is shift the responsibility for the design to the government.

That is clearly moving counter to the way that we have been progressing. We have been progressing as a team with the Congress. We have put the responsibility for the design with the contractors. I want to make that point clear. That would shift the responsibility to us.



Alternative Comparison

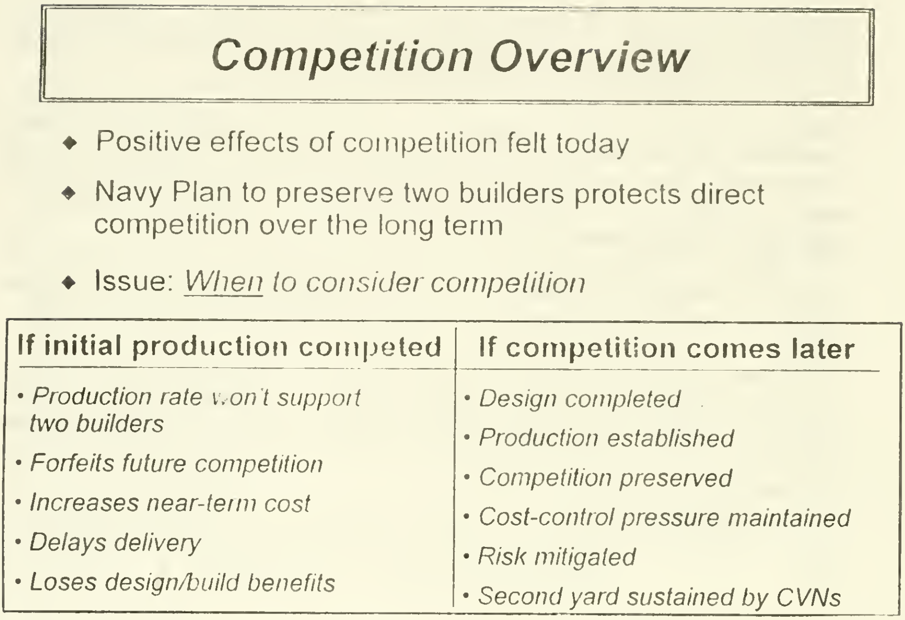
Navy Plan *Complete SSN 23 at Groton Shipbuilder*	*No SSN 23: Retain Groton Shipbuilder*	*No SSN 23: Shift design/ build to Newport News*
- Cost: $1.5B *Delivers WARSHIP*	- Cost $700M to $1B+ *No WARSHIP*	- Cost: $650M to $1.1B+ *No WARSHIP*
- Provides production bridge to affordable *New Attack Submarine*	- Degradation of some shipbuilding skills	- Impedes the design process
- Satisfies military requirements	- Greater risk to component suppliers	- Potential delivery delay of new submarine class
- Preserves two nuclear capable shipbuilders	- Preserves two nuclear capable shipbuilders	- Eliminates second nuclear shipbuilder
- Maintains potential for competition	- Maintains potential for competition	- Forecloses potential competition
- Low Industrial Risk	- High Industrial Risk	- High Industrial Risk

On this slide you will see how we believe our plan stacks up against the other alternatives. Keeping the Groton shipbuilder alive without SSN–23 will cost about $1 billion.

We get no warship just keeping it alive without SSN–23, but we would still have two nuclear capable shipbuilders. I believe that is not enough for our money.

Shifting the whole effort to Newport News, as you can see in the third column, has the impacts that we have already discussed. We would have cost increases. We would foreclose future competition.

We would still have no warship at the end of the day. We believe our plan of building SSN–23, plus completing the New Attack Submarine design and construction, represents the lowest cost approach with acceptable risks to sustain our industrial base while preserving our option for future competition.



Competition Overview

- Positive effects of competition felt today
- Navy Plan to preserve two builders protects direct competition over the long term
- Issue: *When to consider competition*

If initial production competed	If competition comes later
• Production rate won't support two builders	*• Design completed*
• Forfeits future competition	*• Production established*
• Increases near-term cost	*• Competition preserved*
• Delays delivery	*• Cost-control pressure maintained*
• Loses design/build benefits	*• Risk mitigated*
	• Second yard sustained by CVNs

The issue of competition is very important, Mr. Chairman, and I know many of the Senators remarked on that. We have looked very closely at this issue as we have developed our plan.

At the outset, let me say to you that our Navy plan is the only plan that provides a reasonable chance for direct competition in the future.

If we compete initial production, as you can see on the left side of that slide, the results really are not very good. It will increase our costs. It will delay delivery.

Because near term production rates will not support two builders at this time, we could end up in a situation where we will forfeit any opportunity for future competition. At best, we would end up with two nuclear builders remaining, but at a very high price.

If we reserve the option for competition in the future, we believe the picture is better, and you see that on the right-hand part of the slide. Completing the design at Groton reduces the risk and provides conditions much better suited for competition. In the interim, we maintain cost leverage by keeping two nuclear shipbuilders available and sustained, one with carriers and carrier refuelings and the other one with submarines.

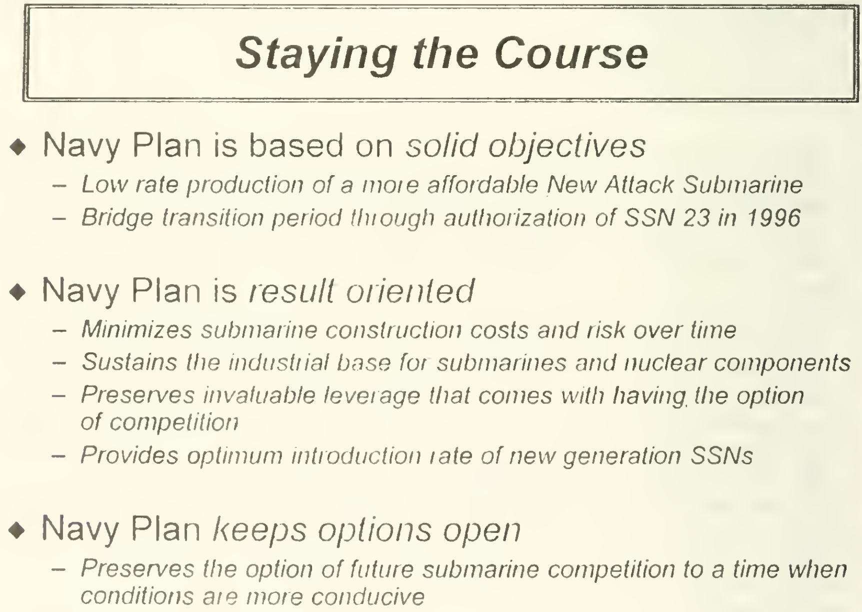
At this point, I would like to comment, if I may, on the Newport News proposal as I have seen it. As you know, they have asserted that there is roughly $2 billion in savings if the first five New Attack Submarines could be built there. I know they will have an opportunity to present their case.

Our assessment, however, tells us three things about their proposal. First, it is chiefly a cost-spreading proposal. It is not a cost-saving proposal. Second, it is based on optimistic future workload assumptions. For me, that is a high risk. And third, I believe it understates some of the significant near-term penalties of disrupting our Navy plan, not only in terms of money, but in terms of the time it takes to deliver the New Attack Submarine.

The cost-spreading issue deserves particular attention. Significant savings from their proposal are associated with sharing fixed overhead. If this additional business, which is commercial, does not materialize, the savings do not materials. We would still have to pay, in addition, the cost of the Government transferring the design that I talked about earlier.

So even if they were to get the optimistic forecast, we would still have the cost of the design and the design transfer. Were those forecasts not to come true, the savings would not be represented as well.

To sum up, from our perspective, this is a high risk proposal. We could wind up without the savings, wind up without a warship, and wind up without a second nuclear capable builder and any chance for future competition. We believe our plan represents the most prudent cost.



Staying the Course

- Navy Plan is based on *solid objectives*
  - *Low rate production of a more affordable New Attack Submarine*
  - *Bridge transition period through authorization of SSN 23 in 1996*
- Navy Plan is *result oriented*
  - *Minimizes submarine construction costs and risk over time*
  - *Sustains the industrial base for submarines and nuclear components*
  - *Preserves invaluable leverage that comes with having the option of competition*
  - *Provides optimum introduction rate of new generation SSNs*
- Navy Plan *keeps options open*
  - *Preserves the option of future submarine competition to a time when conditions are more conducive*

In closing, we have taken a very thorough look at this issue. We will be prepared, all three of us, to answer any questions that you may have. We thank you for your time and attention.

Senator COHEN. Thank you very much, Secretary Slatkin.

[The prepared statement of Ms. Slatkin follows:]

PREPARED JOINT STATEMENT BY HON. NORA SLATKIN, ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT AND ACQUISITION); ADM. BRUCE DEMARS, USN, DIRECTOR, NAVAL NUCLEAR PROPULSION; AND VICE ADM. T. JOSEPH LOPEZ, USN, DEPUTY CHIEF OF NAVAL OPERATIONS, RESOURCES, WELFARE REQUIREMENTS AND ASSESSMENTS

Mr. Chairman, distinguished members of the subcommittee, thank you for this opportunity to appear before you to discuss the Department of the Navy's Submarine Program and fiscal year 1996 budget request.

In my testimony today I will make three main points:

First, the changes brought by the end of the Cold War mean significant changes for our attack submarine program. We must maintain undersea superiority, but we are putting new emphasis on a variety of missions to deal with the demands of this new era.

Second, we have the right platform for the future with our smaller, more affordable but very capable New Attack Submarine. The application of technology to reduce cost, and the emphasis on flexibility and modularity to adapt to new missions mark a significant change in focus from our past Cold War priorities.

Third, we face a near-term decision on a production bridge to move us from where we are today to where we need to be to begin production of our New Attack Submarine. We have thoroughly examined this issue in studies within the Department and without. Our analysis shows us that one solution gives us both the best return on our money and allows us to best prepare for the future. That solution is using construction of the SSN-23 as the production bridge to the New Attack Submarine.

To support these points in detail, Mr. Chairman, I have divided my testimony into three main parts. First our mission requirements; second, our New Attack Submarine program, and third, the important near-term decisions for submarine recapitalization.

I. THREAT MISSION REQUIREMENTS

Why Submarines?

Before discussing the specifics of the submarine recapitalization and modernization plan it is worthwhile to review the value of submarines. Why do we need them? What do they do?

Their most enduring characteristic is Stealth. As in any form of warfare, the ability to remain undetected or camouflaged from the enemy is of prime importance. Today, and perhaps more so in the future, submarine Stealth will translate into two major warfare enhancements.

- The submarine can perform its peacetime forward deployed missions in a non-provocative fashion, thereby minimizing confrontation and diplomatic escalation.
- The submarine can perform these missions in the midst of anticipated threats without a defensive network for self-protection.

The SSN operates without a "logistics tail"—routinely remaining at sea without resupply for months at a time. It is constantly ready to perform all of its multiple missions and is capable of performing several simultaneously. With the advantages realized from nuclear propulsion it responds instantly to tasking.

Submarines are usually the first naval platform to arrive on station and can remain there unsupported. This presence provides full spectrum tactical intelligence collection and provides on the scene indication and warning of an adversary's actions. Armed exclusively with an offensive payload, they provide firepower for land attack and sea control.

The Need for Superior Submarines

Clearly, the need for dominance in submarine warfare did not end with the Cold War: Russian technological advances continue to challenge our superiority. And with the global proliferation of diesel submarines the need for quality submarines remains great. Countering this worldwide threat is justification alone to warrant continued dependence on this weapon platform. But there are even more compelling needs:

- As long as other nations maintain the ability to launch ballistic missiles from submarines, we will need attack submarines—they are our primary, and sometimes only, conventional means of holding this threat at bay.
- Our attack submarines provide critical national intelligence and surveillance information. The fact that a submarine can collect this information while "invisible" to the regional aggressor is another indicator of their strategic importance to the Nation.
- The same cases can be made for the unique contributions submarines bring to regional conflicts and strategic deterrence, as well as, the enabling role they play

for joint forces as they covertly prepare the littoral battlespace for the entry of follow-on forces.

Russian Submarines

The entire Russian military has been affected by dire economic conditions. However, within the Russian Navy the submarine force has been far less affected than the surface force. Their submarine research, development and construction programs remain aggressive. We cannot afford to lose sight of this reality as we concentrate on regional conflicts and Third World capabilities. We, as a maritime nation, should remain committed to not ceding undersea superiority to any other power.

Out of area Russian submarine activity is lower than Cold War levels. However, a recent demonstration of Russian submarine potential occurred in July 1994. An Oscar anti-ship missile submarine left its home waters and intercepted two U.S. Carrier Battle Groups operating in the Western Pacific. This episode reflects a Russian desire to maintain a world class submarine force. The ultimate future of the force will depend on economic recovery, the Russian Navy's claims on defense resources, and the out come of the Russian debate over the future of the nuclear triad.

As other nations develop submarine expertise, incidents such as this are likely to occur. Nations with nuclear submarines are capable of interdicting shipping on the open seas while those with conventional submarines can deny freedom of navigation through geographic choke points and transit lanes in proximity to their shores.

Russian Submarine Quality Improves

Russia has placed a national priority on quality submarine forces both attack and ballistic missile retaining a formidable force of over 180 capable nuclear and diesel submarines today and projected to be building toward a quality force of 20 ballistic missile submarines, 60 nuclear attack submarines (including 14 SSGNs) and 40 diesel submarines by early in the next decade.

With increasing dependence on the submarine force for executing their nuclear missile strategy, the Russian commitment to develop the most advanced technologies in their submarines continues unabated. Their national resolve to field highly capable attack submarines hinges on this national policy. The Russians frequently deploy their SSNs as protective assets for their SSBN force and as such they recognize that these assets must be equal if not better than U.S. submarines.

With the introduction of the improved Akula submarine, the Russians have seized the lead in submarine acoustic quieting. Later units of the Akula class submarine have been backfitted with advanced quieting equipment. These hulls are quieter, at some speeds, than our best 688Is. Additionally, submarines with equivalent or better quieting are in construction. They will retain the status of having the quietest submarines in the world until the SSN–21 is delivered in 1996 and becomes operational around 1998.

Threat Proliferation to Littoral Nations

The concern is not limited to Russian submarines. The Chinese submarine force is the third largest in the world and includes six nuclear powered submarines. Of particular concern to our Navy is the increased proliferation of advanced weapons systems, especially diesel submarines and mines to other countries. Third World countries can produce diesel submarines or procure them from Russia or Western Europe. Mines are also widely available on the world market.

At present there are more than 40 countries that maintain and operate diesel submarines. Although the combined inventory of over 350 submarines includes many antiquated submarines, there are approximately 25 modern diesel submarines in construction throughout the world today. Some of these non-nuclear submarines are available for procurement on the open market. This is a challenge to our anti-submarine forces. In addition to quality platforms, weapons systems, sensors and processing power are available to countries intent on shifting the balance of regional power. Our continued investment in submarine modernization is the most prudent counter to these threats.

New Threat Environment

The warfare challenge that drives the need for submarines extends beyond the submarine threat. Missiles and mines are among the top warfighting concerns of our naval leadership as they look to the future. The value of the submarine in this hostile environment cannot be overstated. The submarine role takes on greater importance as littoral nations strive to procure the warfighting equipment that could deny surface access to adjacent waters. Submarines operating in or near these waters provide the Task Force Commander with a non-obtrusive asset that prepares the battlespace and responds with force when required. This unique warfighting asset prepares the battlespace to enable the flow of follow-on forces.

Force Levels and the Need to Restart Production Now

The Department of Defense position is to maintain a force level of 45–55 attack submarines. The Joint Chiefs of Staff have mandated that 10–12 submarines have *Seawolf*-like stealth by the year 2012.

No U.S. submarine has been authorized for construction since 1991.

This creates a challenge of maintaining the required force level in a era of rapidly declining budget resources with an unprecedented gaps in the construction of nuclear attack submarines.

We need to achieve a continuous and efficient submarine production rate by 2002 in order to sustain the required SSN force levels. Starting in 2011 our remaining 688s will reach the end of their service life at a rate of two to four per year. Given the time span to construct a submarine coupled with the fact that future build rates will be at a low rate of production—we must begin building the new class of submarine as soon as we can—1998. Reaching low rate production by the turn of the century will satisfy vital military requirements and sustain our ability to build submarines—affordably.

II. NEW ATTACK SUBMARINE

Why a New Class of Submarines?

Two distinct streams of thought converged to establish the requirement for a new submarine design:

- First, the anticipated demise of the Russian Navy called into question the need for *Seawolf* class submarines. The SSN–21 was perceived to possess excess military capability in light of the projected post-Cold War security environment. The Navy revised its submarine recapitalization efforts toward developing a lower cost alternative for *Seawolf*. Simply stated, the Navy needs a submarine that can be built in adequate numbers to sustain submarine force levels well into the next century. "Surplus Capability" had to be traded for cost.
- Second, the dominant threat over the past four decades has been the Soviet Union. That threat concentrated submarine performance toward only two of the many missions performed by SSNs. Accordingly, submarine design efforts were also dominated by Anti-Submarine warfare and Anti-Ship Warfare mission requirements. Although other missions were exercised during the Cold War, special enhancements and technology applications were not optimized in submarine designs. Today, the threat has expanded beyond the Russian Navy to a more diverse set of dangers that include theater ballistic missiles, cruise missiles, diesel submarines and mines that are now being proliferated throughout the littoral nations of the world. Realizing that SSNs will play a prominent role in this new security environment, the Navy acknowledged the need for a new submarine, specifically tailored for the changing mission and threat.

The confluence of these two streams of thought led to the development of the New Attack Submarine—a submarine that will provide the Navy with the required military capability for less cost—and fully address the multi-mission diversity required in the post-Cold War environment.

Design/Build Approach

The New Attack Submarine is using a design/build approach as the cornerstone for affordability. We have established a partnership with the Groton, CT builder much earlier in the ship design process than on previous submarine programs. This was possible because decisions taken earlier determined that the lead New Attack Submarine would be designed and built at Groton. This early partnering meant that the design could be truly optimized to the builder's method of ship construction. There was an early establishment of integrated teams from the Navy, key component suppliers, designers and shipbuilders to drive costs down by making prudent, early decisions on ship design before less efficient approaches were locked in.

New Attack Submarine—Right for the Future

The New Attack Submarine design incorporates needed improvements on core characteristics that make submarines dominant in multiple warfare scenarios. It also reflects a dedicated effort by the Navy to preserve or enhance the submarine's performance in most mission areas.

The design is innovative by being able to insert new technologies as they develop and accommodate new equipment. Integral to this entire process is the unprecedented demand for controlling procurement and life cycle costs. The need for greater military capability and flexibility must be satisfied at the lowest possible cost.

New Attack Submarine—Littoral Warfare Performance

The New Attack Submarine is the first nuclear submarine designed to focus on the spectrum of missions rather than emphasizing Cold War priorities. For operations in potentially mined and shallow waters, the new submarine will incorporate a system that reduces its magnetic signature. Its mast arrangement and torpedo room will be reconfigurable so that they can be altered to conform to specific missions. Incorporating a fiber optic "periscope", called a Photonics Mast, provides improved night vision, enhanced image recognition, improved threat recognition and a laser range finder. It will also be constructed with a Special Forces exit and entry chamber. It will be capable of carrying underwater vehicles designed to deliver Navy Seals or Marine Recon Forces.

An "open systems" commercialized electronics architecture, facilitating the use of Commercial Off the Shelf Systems, ensures that New Attack Submarine will remain in step with the electronics revolution. While remaining the "silent service", this submarine will be connected with all Naval and Joint communications networks.

Last, engineering developments in the propulsion plant contribute to the New Attack Submarine's total mission performance. Stealth is the enabling capability that allows the submarine:

— to maintain tactical advantage
— to enjoy unimpeded access to critical waters
— to avoid confrontation when appropriate
— to covertly observe the adversary

New Attack Submarine and Affordability

In addition to the military requirements that drove the design of the New Attack Submarine, affordability has been a major focus since the work began. Once the military requirements were established and validated, affordable production and life cycle support assumed center stage.

Major cost reductions have been realized through producibility initiatives such as simplification, the use of more commercial items and integrating the efforts of design and build teams.

This New Attack Submarine, with all its enhanced capabilities, will cost far less than producing *Seawolf* in a similar economic and production environment. In fact, the cost will be comparable to the *Los Angeles* class submarine in today's market.

New Attack Submarine and Flexibility

Efforts have been made to ensure that the New Attack Submarine will remain the right submarine far into the next century. It has been designed for flexibility. It affordably incorporates future technologies when they become available. One of the enabling features for unprecedented capability is Modular Isolated Deck Structure (MIDS). MIDS isolates deck mounted equipment from radiating noise into the water and protects the same equipment from violent external shock. Because MIDS satisfies a large portion of the noise and shock specifications, commercial equipment including electronics can be used more than ever before. The need for MILSPEC equipment is reduced. Since more commercial components are used, this platform will be able to affordably maintain "state of the art" technology throughout its lifetime.

After 20 years of production and 62 ships, the *Los Angeles* class submarines have expended their room for growth, due to weight constraints. The MIDS concept will help mitigate this problem from occurring on the New Attack Submarine.

The Navy and DOD have confirmed independently that best state-of-the-art technology has been incorporated into the New Attack Submarine; there are no new technologies in sight; and when new technologies become available, New Attack Submarine will share in their use and do so in an affordable manner.

The Navy's integrated submarine recapitalization plan sustains a critical national asset ensuring that we maintain future readiness and maritime supremacy. The plan to build the SSN–23 in fiscal year 1996, continue New Attack Submarine design efforts and start lead ship construction in fiscal year 1998 is fully funded in the FYDP. The second New Attack Submarine (fiscal year 2000) is also fully funded in the Future Years Defense Plan.

III. THE REQUIREMENT FOR A BRIDGE SUBMARINE

We have made a commitment to the New Attack Submarine as the submarine for the next century, but we have a problem.

The problem is an unprecedented gap in the history of the construction of attack submarines. There have been no new construction starts since 1991. We are clearly in a transition period from high rate to low rate production. We need a method to "bridge" this gap. There are six key elements to be considered in any bridge solution:

1. Design of complex, vendor-supplied non-nuclear components,
2. Production of complex, vendor-supplied non-nuclear components,
3. Design of nuclear components,
4. Production of nuclear components,
5. Design of nuclear submarines,
6. Construction of nuclear submarines.

The issue was examined in a number of ways, including studies by the Navy, the Joint Staff and the Office of the Secretary of Defense, as well as an independent examination of the issues by the RAND Corporation.

The conclusions drawn by all of these studies are essentially the same, i.e. additional SSN construction is essential to "bridging" submarine production from 1991 (last nuclear submarine new construction authorization) to the planned authorization of the New Attack Submarine in 1998. The gap, without SSN construction, would have a devastating impact on an industry which, of necessity, is dedicated to design and construction of nuclear submarine components and has little or no offsetting, parallel commercial work.

Construction of the SSN–23 at the Groton builder was determined to be the most time- and cost-efficient solution. This decision was taken only after a thorough examination of alternatives and provides clear benefits for the Navy and the Nation.

Alternatives for Bridging the Gap

1. Shutdown of the Industrial Base until 1998 or later

Nuclear capable shipbuilders represent a collection of skills that are difficult to establish but quick to perish. We have never attempted a shutdown and restart of a nuclear capable shipyard. It would be safe to say that such an exercise would be of very high risk and there is no guarantee that we would ever be able to recover the capability. Additionally, the impact of any protracted gap is felt at the component supplier level as well. The gap may well force some of the vendor base to leave the industry. These vendors would have to be replaced before submarine production could be restarted with associated cost and schedule impacts. This would be a particularly acute problem for specialized component manufacturers.

The loss of a nuclear capable shipyard precludes the ability to rapidly ramp up production at a later date. Recertification of a shut down builder would be a long process and would require immediate restart and high SSN build rate (3–4 per year) to sustain the required force levels.

Finally, this option provides none of the key ingredients needed to permit construction of the New Attack Submarine, i.e. design and construction skills.

2. Bridging the gap with selected submarine components

This option delivers no capability for the investment made. It is a make work type of scenario that provides no support for the ship design, integration nor construction process.

3. Bridging the gap with overhaul/new construction of SSN–688I class submarines

Overhaul of SSN–688Is

Submarine overhauls do not require the same type or magnitude of design effort associated with new submarine development. Similarly, overhauls do not require and, therefore, do not preserve the mix of skills demanded by new submarine construction. Further, overhauls provide little work for component suppliers. Without new construction, suppliers will go out of business. The talent, skills and discipline to design, build, test and integrate these components will be lost. Reconstituting would be time consuming and costly, assuming it could be done at all. The overhaul/upgrade approach postpones inevitable block obsolescence.

Continued Construction of SSN–688Is

Construction of a single SSN–688I in fiscal year 1996 may not be achievable by industry due to the short preparation time and does not provide enough workload or require the right mix of skills to maintain this critical core of personnel. It would take two SSN–688Is to provide the necessary workload to maintain baseline construction skills.

Further, as the Navy shifted to SSN–21 design and production in the late 1980s, SSN–688I suppliers began shutting down production of SSN–688I material and components and retooled to support SSN–21 production. Retooling and restarting

SSN–688I production to support one or two ships, would be expensive and inefficient, as would reinvesting in some of the older technologies which have been overtaken by *Seawolf* technologies.

Construction of SSN–23

Construction of SSN–23 provides the most cost-effective solution to sustaining the nuclear submarine design and construction capability. This approach has the near term added benefit of providing the Nation with a third state-of-the-art *Seawolf* submarine.

The authorization of SSN–23 takes advantage of the $900 million of SSN–23 specific long lead materials previously authorized.

Authorization of SSN–23 and low rate production of New Attack Submarines, beginning with the lead ship in 1998, provides the necessary workload to maintain critical construction and design skills through this decade. Other alternatives considered simply do not possess the workload nor require the right mix of skills to adequately bridge the gap.

Why SSN–23?

The case for SSN–23 as a bridge submarine is compelling from the perspective of its value added in terms or warfighting capability, its preservation of key industrial base components and the sense it makes from an economic perspective when compared to other alternatives.

The *Seawolf* class submarine not only addresses all current warfighting needs, but introduces capabilities and technologies that are lacking in today's forces. With its superior speed and payload, the *Seawolf* is ideally suited to deliver a rapid and decisive military response. The acoustic quieting achieved in this ship will preserve U.S. dominance of the undersea battlespace that has been increasingly challenged by the advanced, high quality submarines still being built by the former Soviet Union. Acknowledging this threat, the Joint Staff has called for 10–12 submarines of *Seawolf* level quieting by 2012. In addition to quieting, *Seawolf* provides a reduced magnetic signature, making it less susceptible to mines and shallow water detection, improved electronics surveillance capabilities and the next generation sonar suite; all of which contribute to the missions assigned today and expected tomorrow. *Seawolf* can do every mission better than 688I.

Building the third *Seawolf* also represents a responsible fiscal decision. Prior to terminating the *Seawolf* class and during the subsequent period of program restructuring, approximately $380 million of *Seawolf* class components were purchased. Additionally, $540 million directed by Congress for "SSN–23 or some other project to preserve the industrial base" has been responsibly directed toward the acquisition of SSN–23 components. As a result of this prudent allocation of resources, the remaining cost to build SSN–23 is about $1.5 billion. This is approximately two-thirds of the total cost, and comparable to the cost of building a new 688I.

Thus the decision to complete the SSN–23 represents an exceptional one-time financial opportunity to buy a warship second to none at about the same cost required to build a new 688I. Further, the "to go cost" of $1.5 billion also preserves a vital national resource and maintains market stability serving as a cost control mechanism for future production.

SSN–23 construction not only makes sense from a military value and cost standpoint but has also been proven through repeated, independent, studies to be the most cost effective method for retaining the skills required to build quality submarines.

Among the alternatives considered, SSN–23 has been identified as the only feasible bridge to the 1998 start of the New Attack Submarine. The submarine industrial base is comprised of three major skill and labor elements: those involved with shipbuilding, the non-nuclear submarine unique vendors and the nuclear vendors. While New Attack Submarine development/advanced procurement will support critical design and nuclear production skills, the SSN–23 is the only project available between now and 1998 that preserves the production skills of the shipbuilder and non-nuclear submarine unique vendors. All other options considered include too much risk in maintaining or rebuilding these unique skills and facilities. The production activity over the next decade has been stretched to the breaking point. Any further disruption or alteration of the planned build profile could irreparably jeopardize industry's ability to deliver needed submarines in the future. It is imperative that we build SSN–23 in 1996.

In summary, the decision to build SSN–23 is prudent because it provides unequaled military capability through its superior stealth, speed and payload, it takes advantage of funds already appropriated procuring the ship at a cost comparable with an 688I class today, and it preserves the Nation's ability to build "high tech" submarines—providing stability during industry restructuring and transition to stable low rate production.

Cost Impact of Not Building SSN–23

The remaining investment to deliver SSN–23 is $1.5 billion. Completing the SSN–23 is part of the overall Navy plan to bridge to the New Attack Submarine at the Groton, CT shipyard with lead ship construction commencing in 1998.

Detouring from completing SSN–23 would cost the government roughly $700 million to $1.0 billion plus potential intangible costs that could be hundreds of millions of dollars. These cost are increased costs to the current *Seawolf* and Trident programs as well as the New Attack Submarine program. They are all unbudgeted costs.

The rough estimate of government liability in each area (in then year dollars) is:
Existing contracts, $205 million to $360 million.
New Attack Submarine, $510 million to $670 million.
Potential other costs, unknown (potentially 100s of dollars in millions).

- *Existing Contracts.* Because there have been no submarine starts since 1991, shipbuilder workload is dramatically declining. Without SSN–23, overhead/indirect cost allocations would increase for the shipbuilder's remaining contracts. Specifically:

— The overhead rates, estimates at completion and budgets relating to all the shipbuilder's existing contracts presume SSN–23 will absorb a substantial share of the shipbuilder's overhead. Deletion of SSN–23 would cause overhead, to be allocated (via higher overhead rates) among remaining contracts. Moreover, additional indirect costs such as construction facility/equipment lay-up costs and unallocated material cost would be charged to existing contracts.

— Higher overhead rates also would result in increased costs to Navy on its engineering and design contracts, which are cost type contracts for which Navy pays all allowable and allocable costs. These contracts represent about half the work to be performed by the shipbuilder for the rest of the decade.

- *New Attack Submarine.* Deletion of SSN–23 would cause overhead, which otherwise would be borne by SSN–23 in fiscal years 1998–2002, to be allocated to the New Attack Submarine (via a higher overhead rate). More importantly, without SSN–23 in fiscal year 1996, the Navy would lose—and then try to reconstitute—critical capabilities essential to constructing the New Attack Submarine in fiscal year 1998, e.g., skilled tradesmen, unique construction facilities, and key submarine component suppliers. The New Attack Submarine would bear the cost of restarting or sustaining these capabilities.

Tomorrow's Readiness—Production Activity Snapshot

During the 1980s the Navy was authorized to build 38 submarines. So far, in the 1990s the number is four. As the number of submarines under construction declined from 24 in 1991 to 2 in 1996, the submarine industrial base embarked on a tremendous restructuring program.

Steady production of one to two submarines per year represents the most efficient production rate for this restructured industry. This rate safeguards the Navy's future capability to build quality submarines and provides the necessary force structure as 688 class ships reach their end of service life. The earliest start for the new SSN is 1998, with stable production achieved shortly thereafter. Industry needs a bridge to 1998. Numerous studies conducted by the Joint Staff, OSD, Navy and other independent agencies show that constructing a third *Seawolf* is the most economical and lowest risk option for bridging this gap.

Certain components are unique to submarines making the submarine force the only market for them. Manufacturing these components requires an extremely skilled work force and expensive facilities. All are costly to maintain. Private industry may not support retaining this capacity unless there is a promise of continued opportunities. Committing to a low rate of production is essential toward gaining the necessary support among the unique vendors and builders of submarines.

The knowledge and skills required for submarine design and construction are unique and perishable. Without exercising these skills through the actual practice of submarine shipbuilding, they will rapidly erode. Reestablishing proficiency is a difficult and time consuming process.

Examples of the time needed to fully establish proficiency in the key trades associated with the building of a modern nuclear powered submarine include:

— 3 years: Sheetmetal and Carpenters
— 5 years: Shipfitters, Welders, Electricians, and Pipefitters
— 6 years: Machinists
— 9 years: Testers

The exacting standards we enforce during the construction of these vessels require these times to attain proficiency.

For this reason, numerous submarine studies conducted over the past several years stress the importance of avoiding a production gap. Once these skills are interrupted, a series of delays are introduced that could ultimately impact our ability as a nation to build and afford these submarines.

This is true not only with production skills, but also in the area of submarine design. It takes 10 to 15 years to develop a design engineer. The training includes a period of formal education, followed by an apprenticeship program that includes over 5 years of hand-on experience. These engineers represent a very scarce and valuable commodity—one that is best kept intact through a continuous design effort.

The other submarine program options will require some amount of reconstitution of these critical skills, resulting in higher risk and near term costs. The Navy plan is the only approach that minimizes a design or production gap.

The Need for Two Nuclear Capable Shipbuilders

The Bottom-Up Review arrived at the national policy decision to maintain two nuclear capable shipyards. Two nuclear capable shipyards is a fundamental response to uncertain future threats in that it provides the decisionmaker the ability to ramp up submarine production if and when required.

Two nuclear capable shipbuilders also provide the following benefits:

- Provides greater stability to the nuclear shipbuilding industry in terms of a business base,
- Allows for the introduction of competition at a future date if it is advantageous to the government. The fact that competition is retained as a future possibility creates appropriate pressures to contain current costs.
- Crisis protection in the event of a natural disaster.

Any potential downsizing to a single yard must also be evaluated in terms of the capabilities we lose. Those include:

- Trident/Seawolf design, engineering, production and fleet support expertise,
- Nuclear power plant design capabilities.

The Impact of Competition

The Navy's current plan—SSN–23 in fiscal year 1996 and continuation of the New Attack Submarine Design/Build process at Groton, CT—preserves two nuclear capable shipbuilders and permits competition to be introduced when it is advantageous to the government.

Simply put, potential competition in the New Attack Submarine program is an issue of timing. In order to adequately sustain competition there must be a sufficiently high build rate of at least two submarines per year. The New Attack Submarine program does not achieve this level of build rate until fiscal year 2002 and beyond. There is also the question of when we will build the next carrier.

Introducing competition now is not in the best interest of the government based on the following:

- It would reduce the benefits of the design/build approach.
- Near term construction activity is insufficient to sustain two production yards.
- It would force a downsizing to a single nuclear capable shipbuilder if Groton, CT were to lose the competition.
- It would require both yards to participate in the current New Attack Submarine design process with undesirable results including: increased design costs, no benefit from *Seawolf* lessons learned, i.e. forces split design production effort, breaks down existing partnerships with suppliers and limits benefits from the current design/build process.
- It would extend the construction period of the New Attack Submarine lead ship.

Introducing competition in the future may be more advantageous because:

- It allows completion of New Attack Submarine design and supports an orderly transition to stable low rate production.
- It avoids inefficiencies during the tenuous transition period.
- CVN production and *Nimitz* class carrier refueling adequately sustains Newport News in the interim period.

A competitive scenario before stable production rates are achieved adds an estimated $650 million to $1.1 billion to cost and extends the lead ship construction period, does not support force level requirements and, in fact, we may still wind up with two nuclear capable shipyards at higher costs.

Assessment of Navy Plan vice Shipbuilder Proposed Alternative Plan

The Navy recently completed an assessment of the Navy's plan vice an alternative proposal by Newport News. This proposal calls for competition for constructing the lead New Attack Submarine. A copy of our report is provided as an attachment to this statement.

Newport News claims they would win a competition for the New Attack Submarine and save the Navy $2 billion over the first five hulls.

Although our review showed that the Newport News plan would realize some savings, it would significantly jeopardize the Navy's ability to efficiently accomplish nuclear warship design and construction. To put this issue in perspective, the additional cost to maintain two nuclear capable shipbuilders per the Navy's plan is approximately 3 percent of the cost of the Navy's total Groton/Newport News workload when based on realistic assumptions about future workload and costs at the two shipbuilders over the period fiscal years 1995–2012. Nevertheless, the benefit of maintaining two nuclear shipbuilders is clearly worth the additional cost.

The cost of maintaining nuclear capable shipbuilders is summarized below:

SHIPBUILDER COST (FISCAL YEARS 1995–2012)

[Cost to Navy for 24 SSNs, 4 CVNs and 4 CVN Refuelings in Fiscal Year 1996]

	Dollars in billions		
	SSNs	CVNs/ Other	Total
Two Nuclear Shipbuilders (SSN–23 and 23 New Attack Submarines at Electric Boat, CVNs at Newport News)	$19.5	$20.7	$40.2
One Nuclear Shipbuilder (24 New Attack Submarines and CVNs at Newport News)	18.7	20.2	38.9

CONCLUSIONS

In summary, nuclear attack submarines will continue to be vital to the Nation's security. The nuclear attack submarine's multi-mission versatility and stealth will strengthen its role in the next century. Its ability to rapidly respond to crisis situations, remain on station almost indefinitely, and provide a variety of response options are irreplaceable and increasingly important in the new security environment.

SSN–23 provides the Nation with unequaled military capability and sustains the industrial base.

Our future New Attack Submarine provides the best balance between cost and capability.

Strong commitment to stable low rate production is key to preserving our Nation's ability to produce advanced nuclear submarines. We must protect this crucial national asset that has been decades in the making, and allow the SSNs we build to be both capable and affordable.

JOINT REPORT BY ADM. B. DEMARS, VICE ADM. G.R. STERNER, AND REAR ADM. R.E. FRICK ON NAVY SUBMARINE ACQUISITION PLAN AND ASSESSMENT OF SHIPBUILDER PROPOSED ALTERNATIVE PLAN

EXECUTIVE SUMMARY

- The submarine funding decisions now before Congress are pivotal to the survival of our nuclear submarine industrial capability and to maintaining our margin of undersea superiority.
- The Navy's plan—building a final *Seawolf* in fiscal year 1996 and New Attach Submarines beginning in fiscal year 1998 at Electric Boat Division—is the lowest cost way, with acceptable risk, to sustain the industrial base and shift to affordable, capable attack submarines. The plan, consistent with DOD's strategy, preserves leverage and hedges against uncertainty by maintaining two nuclear capable shipbuilders—the Groton shipbuilder with submarines and Newport News Shipbuilding with aircraft carriers.
- Newport News proposed an alternative plan: competition for constructing the lead New Attack Submarine. Newport News claims they would win the competition and save the Navy $2 billion for the first five New Attack Submarines.
- The Newport News plan would realize no significant savings, but would jeopardize the Navy's ability to efficiently manage nuclear warship design and construction. Specifically:

— The cost premium for maintaining two nuclear capable shipbuilders per the Navy's plan is relatively small—about 3 percent of the cost of the Navy's total Electric Boat/Newport News workload when based on realistic assumptions about future workload and costs at the two shipbuilders. Newport News does not factor in Electric Boat overhead reductions and efficiency improvements and therefore greatly overstates the cost differential (direct and indirect) between the two yards. Electric Boat shutdown and Newport News start-up costs ($650 million to $1,100 million total) are key factors that Newport News underestimates.

— The Navy (if Electric Boat shuts down) would lose invaluable leverage and the hedge against uncertainty that come with having two nuclear capable shipbuilders. Having the option of a second yard provides continuing leverage to keep costs down even without direct competition—and preserves the option of competition in the future once the build rate is high enough to support building at two yards.

— Electric Boat is the preeminent yard in the United States for nuclear submarine design and construction technology; the Navy would lose this expertise should all attack submarine construction shift to Newport News. This expertise is crucial given our narrowing margin of submarine superiority.

— Competing the lead ship would create major program management problems and undermine the cost savings potential of the innovative New Attack Submarine design/build process.

Conclusion: Proceed with the Navy plan. The Navy plan will minimize submarine construction costs and risk over time and produce affordable nuclear warships from an industrial base capable (as best as possible) of accommodating future uncertainty.

INTRODUCTION

The submarine funding decisions before Congress are pivotal. The Nation's submarine building capability is at a crucial point. By 1998, the shipbuilders will have delivered all U.S. submarines now under construction. Survival of our nuclear shipbuilding capability and reactor components industrial base is in jeopardy—along with the future of affordable nuclear warships. Moreover, our margin of undersea superiority is the slimmest since the 1950s; for the first time, another nation has quieter submarines at sea. To meet this challenge, the Navy has a plan well underway.

THE NAVY'S PLAN AND UNDERLYING DOD STRATEGY

Navy Attack Submarine Acquisition Plan—the Lowest Cost Approach with Acceptable Level of Risk. The final *Seawolf* submarine (SSN–23) is budgeted in 1996. Already more than one-third funded, SSN–23 is the lowest cost attack submarine the Nation can build now. SSN–23 supports the Joint Chiefs of Staff military requirement for submarine quieting and is key to maintaining the mix of skills and suppliers needed to initiate building a class of more affordable "New Attack Submarines" starting in 1998. The New Attack Submarine design builds on important *Seawolf* technological advances. Through innovative design concepts and a procurement plan that closely integrates the work of designers, builders, and suppliers, the cost of a New Attack Submarine will be close to that of a new *Los Angeles* class attack submarine. This plan is the lowest cost way, with acceptable risk, to sustain the industrial base for submarines and nuclear components and enable transition to a more affordable attack submarine fleet capable of meeting the threat. The Navy's plan implements the DOD strategy for acquisition of nuclear powered warships.

DOD Nuclear Warship Acquisition Strategy Provides Invaluable Leverage and a Hedge Against Uncertainty. This strategy maintains two nuclear capable shipbuilders—Electric Boat Division with submarines—and Newport News Shipbuilding with aircraft carriers. The Navy is well into implementing this strategy. To reduce overhead and ship costs, Electric Boat is continuing to re-engineer organizations and processes. This effort, coupled with the high aircraft carrier construction and overhaul workload the Navy is directing to Newport News, helps both companies survive while providing ships at reasonable cost. The strategy provides both a hedge against an uncertain future and invaluable leverage that come with having the option to compete. Moreover, keeping two nuclear capable shipbuilders is consistent with other defense industrial strategies; e.g., the United States has five major conventional surface shipbuilders and six military aircraft suppliers.

ASSESSMENT OF SHIPBUILDER PROPOSED ALTERNATIVE PLAN

Alternative Acquisition Plan Would Compete Lead New Attack Submarine. Newport News recently proposed an alternative plan to the Navy and Congress, namely competition for constructing the lead New Attack Submarine—together with the Navy providing submarine overhaul and design work to Newport News to "level the playing field". Newport News indicated that if allowed to bid, they would win the competition and could save the Navy $2 billion for the first five New Attack Submarines—and an additional $4.5 billion if Newport News were to build subsequent

New Attack Submarines to complete the class. Based on Newport News' assertion, the cognizant congressional subcommittees are seeking to understand what, if any, cost premium there is for the DOD policy of maintaining two nuclear capable shipbuilders and whether it would be best for the government to compete the New Attack Submarine.

Assessment of Alternative Plan: Provides no significant savings, but jeopardizes the Navy's ability to efficiently manage nuclear warship design and construction. Specifically:

- The cost premium for maintaining two nuclear capable builders per the Navy's submarine acquisition plan is about 3 percent—when based on realistic assumptions about future workload and costs at the two shipbuilders, as shown in the following table:

SHIPBUILDER COST (FISCAL YEARS 1995–2012)

[Cost to Navy for 24 SSNs*, 4 CVNs and 4 CVN Refuelings]

	Fiscal Year 1996 Dollars in Billions		
	SSNs	CVNs/Other	Total
Two Nuclear Shipbuilders (Submarines at Electric Boat, CVNs at Newport News)	$19.5	$20.7	$40.2
One Nuclear Shipbuilder (SSNs and CVNs at Newport News)	18.7	20.2	38.9

* SSN–23 and New Attack Submarines at Electric Boat; all New Attack Submarines at Newport News

Cost Premium: Three percent.

Attachment A provides details on the above analysis, including the cost estimating methodology. Moreover, Attachment A shows clearly that the savings Newport News predicts would not be forthcoming because Newport News:

— underestimates their overhead rates by assuming unrealistically high levels of commercial, foreign frigate, and Navy repair work;

— is not knowledgeable of (or does not acknowledge) Electric Boat overhead reductions and efficiency improvements achieved through corporate "re-engineering";

— greatly overstates the cost differential (direct and indirect) between the two yards;

— overlooks the bulk of the substantial cost to shut down submarine production at Electric Boat and start up at Newport News;

— does not include the extra cost and consequences to the Navy of providing Newport News the submarine engineering, design, and overhaul work Newport News states is necessary to avoid submarine start-up costs;

— does not factor in the relative efficiency of a one-product yard vice a multi-product yard; and

— assumes a higher learning rate than Electric Boat.

- The Navy (if Electric Boat shuts down) would lose invaluable leverage and the hedge against uncertainty that come with having two nuclear capable shipbuilders. Having two nuclear capable shipbuilders provides the Navy continuing leverage to keep costs down (even without direct competition), preserves the option for competition over the long term, enables faster increase in building rates if necessary in the future, and hedges against loss or problems at one of the shipbuilders. The Navy should retain these crucial advantages, especially since the cost of doing so is relatively small (about 3 percent).
- Competition for initial New Attack Submarines could preclude the possibility of future competition once higher building rates are required. Only two New Attack Submarines are planned in the FYDP—too low a rate to sustain submarine construction at two yards. Newport News could under-bid during the competition given the substantial advantage they have as a result of the Navy's recent sole source contract award to Newport News for construction of CVN–76. Electric Boat then could go out of business, foreclosing the option of competition for submarines in the future. With the Navy's plan, once the build rate is high enough to support construction at two yards, a familiarization contract could be placed with Newport News to enable them to compete for construction of a mature, validated design.
- The Navy would lose Electric Boat's preeminent nuclear submarine design expertise if all submarine construction shifts to Newport News. Electric Boat provides engineering, planning and logistical support for all classes of submarines:

— Electric Boat designed and built the lead ship of all but two of the 16 U.S. nuclear submarine classes preceding the SSN–688. Because of difficulties inherent in trying to resolve issues with a sole source contractor (Electric Boat), the Navy assigned the SSN–688 class design contract to Newport News to obtain the leverage and flexibility that come with having an alternate submarine source. For *Seawolf*, the Navy assigned the work for the ship's front end to Newport News to set up competition for the lead ship construction for a class then expected to include about 30 ships (at a rate of 3 and in some cases 4 per year); Electric Boat already had been selected to design the propulsion plant.

— Electric Boat designed all but one of the Navy's submarine propulsion plant designs, the first Vertical Launch System (VLS), the Wide Aperture Array (WAA), etc.

— Electric Boat developed modular construction for nuclear submarines and led its evolution to the third generation.

Unlike Newport News, which has built ships of many types, Electric Boat always has been a submarine designer/builder. Retaining Electric Boat's expertise is crucial given our narrowing margin of submarine superiority. (See Attachment B for details.)

- Competing the lead ship would create major program management problems. In particular, competition would:

— Impair the New Attack Submarine design/build process by hindering the open communications between the Navy and the ship design yard essential for the process to work. The ship design yard would be reluctant to divulge cost saving construction innovations for fear of undermining its competitive position.

— Undermine shipbuilder responsibility. A "fair" competition requires equal terms and conditions. Since Newport News can't be held responsible for the New Attack Submarine design, Electric Boat would have to be relieved of design responsibility as the single design/build contractor. The government would have to guarantee the design to both competitors—a major source of contentious disputes/problems with past lead ships.

— Impede the design process. If Newport News were to win, either the design would have to be transferred to Newport News or some of the problems experienced by the *Seawolf* program's split design and building yards could recur (e.g., inefficiencies caused by different design philosophies, computerized design systems, part numbers, etc.). If the design operation were transferred to Newport News, the process would be costly, long term, and tumultuous—placing an increasing burden on the Navy's in-house design and engineering resources in an era when privatization is being encouraged government-wide.

The current Navy plan for awarding a design/build contract to Electric Boat would avoid the above problems. (See Attachment C for further explanation.)

CONCLUSION

The Navy is executing a well thought-out plan to produce affordable nuclear warships and, as best as possible, maintain an industrial base which will accommodate future uncertainty.

The Navy's plan is to shift to low rate attack submarine production through authorization of SSN-23 in fiscal year 1996 and the lead New Attack Submarine in fiscal year 1998 with Electric Boat as the designer/builder (see Attachment D for more detail). The Navy's plan will:

- minimize submarine construction costs and risk over time;
- sustain the industrial base for submarines and nuclear components;
- preserve invaluable leverage that comes with having the option of competition; and
- enable transition to an affordable, capable, and flexible attack submarine fleet.

ATTACHMENT A—COST PREMIUM FOR HAVING TWO NUCLEAR CAPABLE SHIPBUILDERS AND ANALYSIS OF SHIPBUILDER PROPOSED ALTERNATIVE PLAN

This attachment provides the results of the Navy's analysis of three key issues:

- the cost of maintaining two vice one nuclear-capable shipbuilders;
- the cost of not building SSN-23 and shifting construction of the New Attack Submarine to Newport News Shipbuilding; and
- the March 1995 Newport News alternative plan for future submarine construction as provided to the DOD and Navy—assumed to be the same plan provided to the House National Security Committee.

THE COST OF MAINTAINING TWO NUCLEAR-CAPABLE SHIPBUILDERS

The Navy's plan for submarine and carrier construction and carrier refueling overhauls maintains two nuclear-capable shipbuilders.

The Navy has never taken the position that the two-yard strategy for building attack submarines is less expensive than a one-yard strategy. However, detailed analysis shows the total, shipyard-wide Navy cost premium for maintaining two nuclear-capable ship builders is relatively small (about 3 percent) under realistic workload assumptions.

Moreover, the advantages of maintaining two yards for the long term far outweigh the estimated cost. Specifically, having two nuclear capable shipbuilders:

- preserves the option for submarine competition when building rates increase in the future;
- provides continuing leverage to keep costs down—even without direct competition;
- enables faster increase in building rate if necessary in the future;
- hedges against loss or problems at one of the builders; and
- is consistent with other defense industrial strategies—the United States has five major conventional surface shipbuilding yards and six military aircraft suppliers.

Any analysis of the cost of maintaining two shipyards must examine short-term and long-term costs and take into account the total cost to the government for work done at Electric Boat and Newport News. The analysis must include attack submarine and carrier construction, carrier refueling, overhaul and repair work and other surface ship construction. In addition, variations in Newport News projected workload must also be analyzed. An analysis focused on just one aspect of the Navy's workload such as attack submarine construction will likely have skewed results.

The Navy examined four alternatives. All alternatives build the same number of attack submarines over the period fiscal years 1996 through 2012. Alternative 1, the baseline case, maintains two nuclear capable shipbuilders and assumes a realistic level of Navy and commercial work. Alternative 2 shifts all nuclear shipbuilding to Newport News and assumes a realistic level of Navy and commercial work.

SHIPBUILDER COST FISCAL YEARS 1995–2012

[24 SSNs, 4 CVNs and 4 CVN refuelings]

	Fiscal Year 1996 Dollars in Billions		
	SSNs	CVNs/Other	Total
Alternative 1—Two Shipbuilders (SSNs at Electric Boat, CVNs at Newport News)	$19.5	$20.7	$40.2
Alternative 2—One Shipbuilder (Realistic workload)	18.7	20.2	38.9

Alternatives 3 and 4 are provided to demonstrate the cost sensitivity of workload variances at Newport News—alternative 3 assumes Newport News' highly optimistic projections of commercial work and alternative 4 assumes a low level of both Navy and commercial work.

SHIPBUILDER COST FISCAL YEARS 1995–2012

[24 SSNs, 4 CVNs and 4 CVN refuelings]

	Fiscal Year 1996 Dollars in Billions		
	SSNs	CVNs/Other	Total
Alternative 3—One Shipbuilder (High workload)	$18.3	$20.1	$38.4
Alternative 4—One Shipbuilder (Low workload)	18.9	20.5	39.4

Details on the cost estimating methodology for the above analysis are shown on the last page of this attachment.

COST OF NOT BUILDING SSN–23 AND SHIFTING ATTACK SUBMARINE CONSTRUCTION TO NEWPORT NEWS

- Impact to non SSN–23 Budget Authority: $650 million to $1,100 million (TY $)
- Electric-Boat Costs

Loss of a Nuclear Shipyard: $440 million to $610 million

$180 million (RAND estimate) to $350 million (Electric Boat estimate) for Electric Boat shutdown

- — Retiree benefits (excluding fully funded pension), undepreciated assets, ongoing facility cost until plant closure complete

~$260 million—Shutdown impacts on existing work

- — Reallocation of fixed costs, which would have been borne by SSN–23, to existing contracts, plus additional inefficiencies for yard closeout
- — Remaining liability to ceiling on shipbuilding contracts

  - *Seawolf* Cost Cap not achievable
  - Recovery of business exit costs would become a higher priority to Electric Boat than its present cost minimization goal

- Environment Cleanup

  Dollars Unknown—Environmental cleanup cost greatest unknown—responsibility would be contentious
  - Could outweigh any plausible ship cost comparisons

- Newport News Costs: $210 million to $490 million

  $30–$6$ million—Adding a new project creates work force and management problems which impacts CVN construction
  - Single product focus in a shipyard yields greatest efficiency
  - Since July 1992, CVN estimates at completion have improved up to 5 percent during period with no submarine authorizations—similar effects seen at other yards

  $180–$235 million—Impact of Design Transfer
  - Must duplicate sunk design efforts
  - Nontransferable efforts at Electric Boat

  $0–$190 million—Impact on Lead Ship Construction
  - Submarine facility restart costs—no attack submarine award in 8 years
  - Submarine work force retraining
  - Delay in delivery
  - Replace lost suppliers and capability for material and equipment
  - Supplier reallocation of fixed costs, otherwise borne by SSN–23
  - Newport News projected lower labor costs

ASSESSMENT OF NEWPORT NEWS SHIPBUILDING ALTERNATIVE PLAN

The Newport News Shipbuilding March 1995 analysis claims the following cost savings:

- $1.9 billion if the first five New Attack Submarines are awarded to Newport News and SSN–23 is built by Electric Boat. Additionally, savings are alleged to increase to $3.6 billion if SSN–23 is not awarded.

Newport News cost estimating methodology is as follows:

- To estimate the cost of building five New Attack Submarines at Newport News vice Electric Boat, Newport News uses a detailed cost estimating model to develop manning and overhead cost projections.
- Workload projections are based on obtaining additional U.S. Navy repair work, commercial new construction, commercial repair, foreign frigates, LPD new construction, carrier refuelings, and an additional carrier (CVN–77). This results in Newport News workload levels which are near record highs. (Without this highly optimistic workload, Newport News' claimed savings are not possible.)
- Newport News assumes submarine overhaul/repair work is provided to Newport News to keep submarine skilled trades available; providing this work to Newport News likely would mean closing a Naval shipyard.

The Newport News analysis does not account for a number of factors and issues which greatly change the cost impact to the Navy. For example Newport News:

- Does not recognize the improved efficiency at Electric Boat expected to result from the design/build process. The potential loss of the Electric Boat design/build effort to date has a direct impact on the affordability of the New Attack Submarine. Newport News assumes they can build the lead New Attack Submarine for less than Electric Boat. However, due to the substantial up front design and planning work inherent in the design/build process, Electric Boat should be able to build the lead ship for less.
- Overlooks the extra costs and risk of converting Electric Boat's design products to Newport News production systems. A portion of the design completed to date would require re-work.
- Assumes extremely optimistic future workload levels, including a large amount of commercial work. This high workload is key to the Newport News savings projection. However, commercial construction usually requires government subsidies or loan guarantees, the cost of which are not included in the Newport News analysis.
- Does not include the extra cost and consequences of providing the submarine engineering, design and overhaul work which Newport News states is necessary to avoid submarine construction start-up costs. Neither Newport News start-up costs nor the extra cost and disruption involved in removing scheduled submarine repair work from Naval shipyards is addressed in Newport News' analysis.
- Does not acknowledge the restructuring, reorganizing and downsizing Electric Boat is actively engaged in to reduce future overhead costs. As a result, the Newport News projections of Electric Boat's overhead are overstated. Through fiscal year

1995, Electric Boat re-engineering has saved the U.S. Government over $100 million, with estimated FYDP savings of over $500 million.

- Overlooks the cost the Navy would incur if Electric Boat were to shutdown.

The Newport News analysis does not appear to include expected construction efficiency improvement at Electric Boat. The Navy expects Electric Boat to improve future submarine construction efficiency because: Electric Boat will have a higher ratio of high skilled workers after downsizing; and Electric Boat is working to establish a multi-skilled worker environment at Groton, similar to that at Electric Boat's Quonset Point facility.

Newport News assumes a significant savings to other work under contract. However, the cost of existing work would go down primarily because Newport News' fixed overhead would be allocated over additional New Attack Submarine work. The government would still pay for all of the overhead.

COST ESTIMATING METHODOLOGY

Shipbuilder Cost

— The total cost of the ship, less Government Furnished Equipment.

Shipbullding Contract

- Labor Hours

— New Attack Submarine labor hours are based on first ship cost relationships at the subsystem level derived predominantly from *Seawolf* returns. Shipbuilder-specific adjustments for make/buy differentials between the shipyards are based on late 1980s SSN–688I class comparisons. Follow ship estimates are based on historical submarine non-recurring costs and projected learning curves. Carrier labor hours are based on recent CVN returns.

— Shipbuilder specific learning curves are applied to both Newport News and Electric Boat New Attack Submarine labor estimates. New Attack Submarine learning curves at Electric Boat are based on the *Ohio* class (SSBN–726) program, adjusted for the design/build process, which possesses many of the single shipyard and design related construction efficiencies embodied by design/build. Newport News learning curves are based on actual SSN–688 learning curves at Newport News.

— Multi-product inefficiencies are estimated where appropriate. As demonstrated by analysis of major U.S. shipbuilders over the past decade, increases in labor hours per ship typically occur when a shipyard, dedicated to single product line, diverts core resources to manage additional product lines. This increases labor hours for multi-product scenarios.

- Direct Labor Rates

— Direct labor rate projections are based on the latest shipyard-specific union wage rate agreements. Outyear projections are inflated via OSD/OMB SCN inflation indices.

- Overhead

— Overhead projections are based on yard-specific trend analysis and projections of outyear operating budgets. Navy modeling of Newport News projections were found to be consistent with recent CVN–76 contract negotiations. Navy estimation of Electric Boat overhead rates is based on monitoring Electric Boat re-engineering efforts, via quarterly SSN–21 Cost Performance Report analysis and periodic interviews of Electric Boat financial control officials. Electric Boat has met their right-sizing goals to date. Far term projections are highly dependent on workload assumptions.

- Material

— Submarine material is based on first ship cost relationships at the subsystem level derived predominantly from *Seawolf* returns. Shipbuilder-specific adjustments for make/buy differentials are based on late 1980s SSN–688I class comparisons. Follow ships are based on historical submarine nonrecurring costs and learning curves. Equal adjustments are made for both shipbuilders regarding New Attack Submarine long lead material and affordability initiatives on all ships. Carrier material is based on CVN return data.

- Profit

— For two nuclear shipyard scenarios, the New Attack Submarine profit percentage is estimated consistent with the *Ohio* class. The *Ohio* class list accurately reflects the postulated competitive situation of the New Attack Submarine program.

— For sole source, single nuclear shipyard scenarios, a fee consistent with that of the CVN–76 award was used.

- Facilities Cost of Money

— Facilities Cost of Money (FCM) is calculated by multiplying the net book value of land and depreciable assets in a firm by a representative loan rate calculated by the U.S. Treasury Department in accordance with Public Law 92–41. This provides the annual imputed cost of money for a defense firm which is allocated across contracts. For shipbuilders with relatively small amounts of depreciable assets, such as Electric Boat, FCM is estimated as less than $10 million per submarine contract. For shipyards with substantially robust capital investment programs such as Newport News, FCM is estimated at $30–$50 million for submarines and $90–$100 million for CVN contracts.

- Plans

— The design cost for lead ships represents the SCN portion of shipyard design and drawings. Follow ships cover follow-on engineering services. The same cost is assumed regardless of shipbuilder.

- Change Orders

— A change order allowance of 10 percent for lead ships and 5 percent for follow ships, as applied to Basic Construction, is used in all scenarios.

- Escalation

— Shipbuilder contracts are "base dated" to a specific month and year. Escalation is the reimbursement of inflation over the life of the contract from the contract's base date, and is dependent on overall shipbuilder cost.

ATTACHMENT B—ELECTRIC BOAT—PREEMINENT SHIPYARD FOR NUCLEAR SUBMARINE DESIGN AND CONSTRUCTION TECHNOLOGY

Electric Boat is the Nation's preeminent submarine designer. Electric Boat, by virtue of its experience and innovation, is the premier resource for submarine design and construction technology in the United States. Electric Boat designs, builds, and supports submarines for the U.S. Navy. Electric Boat's inherent strength derives in great measure from its concentration on one product, for one customer.

- *Electric Boat is the dominant influence in development of U.S. nuclear powered submarines:*

— Electric Boat designed the first nuclear submarine, *Nautilus,* and the first strategic missile submarine, *George Washington.* Electric Boat designed the nuclear propulsion plant in every submarine class, except one, and designed every U.S. strategic missile submarine. Electric Boat pioneered the modular construction process more than 20 years ago, and is now designing the third generation improvement of this process for the New Attack Submarine.

— Of the 19 nuclear submarine classes developed, Electric Boat designed 15 and shares design responsibility for one other. Electric Boat designed and built the lead ship of all but two of the 16 nuclear submarine classes preceding the SSN–688. (The other two classes were designed and built by Naval shipyards.) Because of difficulties inherent in trying to resolve issues with Electric Boat as a sole source contractor, the Navy assigned the SSN–688 design contract to Newport News to obtain the leverage and flexibility that comes with having an alternate submarine source. For *Seawolf,* the Navy assigned the work for the ship's front end to Newport News to set up competition for the lead ship construction for a class then expected to include nearly 30 ships at 3 to 4 ships a year; Electric Boat already had been selected to design the propulsion plant. Whereas Newport News is a surface ship builder that can build submarines, Electric Boat has always been a submarine designer/builder.

— Electric Boat has designed a liquid metal-cooled reactor plant, a natural circulation reactor plant, and an electric-drive nuclear submarine. Electric Boat's experience with class designs and one-of-a-kind designs has been brought to bear in development of the latest submarine classes.

— Because of Electric Boat's experience, Electric Boat is used to resolve systemic submarine fleet problems, improve existing capabilities, and handle demanding first-of-a-kind technology insertion projects which require experienced engineering support. For example, Electric Boat designed and built the first Vertical Launch System for cruise missiles for SSN–688 class submarines. Electric Boat developed the installation design for the first Wide Aperture Array on SSN–688 class, the first propulsor, and completed the redesign for installing the first BSY–1 combat system on SSN–688 class.

- *Electric Boat design capability is crucial to the industrial base for submarine technology in specialized areas* such as propulsion plant design, structural acoustics, hydrodynamics, weapons handling, and exotic materials. Electric Boat is applying this technology to the New Attack Submarine design.
- *Electric Boat is Pioneering the Design/Build Process for Submarines.*

— Electric Boat has developed a new approach to submarine design and construction for the New Attack Submarine based on Electric Boat's past submarine design experience and reviews of other successful manufacturing companies. This approach treats the previously separate design and construction elements as a single process called "design/build". The process is being used in all phases of the design process to optimize the New Attack Submarine design for modular construction and to reduce or eliminate traditional cost drivers.

— The design/build process uses computerized design tools such as electronic visualization techniques, and a single multi-purpose electronic database, coupled with a team approach for accomplishing work. This allows the simultaneous application of the skills and abilities of all participants in the submarine design and construction process, starting with the initial phases of design through delivery of the lead ship. This team approach is intended to ensure that:

- — desired ship performance is affordably achieved;
- — correct build strategy is implemented;
- — required tooling is available,
- — construction accessibility and sequence are optimized;
- — producibility is factored into the design;
- — timely material selection and ordering;
- — supplier capability is assessed;
- — construction is accurately planned; and
- — life cycle requirements are fully developed/documented.

— The Navy/DOD decision to select Electric Boat as the design/build yard for New Attack Submarine allows all of Electric Boat's resources to fully participate in the design phase of the program. The design/build process teams individuals with experience and skills in engineering, construction, testing, planning, purchasing, and quality assurance, supplemented by individuals with specialty expertise in analysis, cost estimating, life cycle support, environmental considerations, ship operations, and training. These individuals, with the many diverse skills needed to design, acquire material, construct, test, and support certification of the ship, interact with the designers to ensure their areas of specific skill and interest are addressed from the onset of the design through ship delivery, operation and eventual disposal.

— Benefits from this design/build process (i.e., Integrated Product and Process Development approach) developed at Electric Boat include reduced product development time, meaningful performance vs. cost trade-offs, minimal change and rework, and producible designs, all leading to an affordable, capable platform.

- *Electric Boat is the Industry Leader in Submarine Technology Development*, including component development, hydrodynamics, acoustics and quieting, composite materials, life support systems, and simulation-based design. Some specific examples of Electric Boat's activities include design and construction of a composite main propulsion shaft, magnetic bearings, distributed electrical systems, and permanent magnet motors. Beyond the specific technology development, Electric Boat's ability to integrate these technologies into the overall submarine design is crucial to a successful submarine design.

CONCLUSION

The Navy must continue to improve upon what has become an increasingly thin margin of superiority in undersea warfare. To accomplish that, we must preserve the knowledge, skills, and capabilities to design and build ever more technologically advanced submarines. Maintaining the unique technology resource at Electric Boat will do this at a reasonable cost without undue risk to the Navy.

ATTACHMENT C—PROGRAMMATIC ISSUES RELATED TO COMPETING THE LEAD NEW ATTACK SUBMARINE

A decision to compete construction would, by itself, cause a number of detrimental programmatic problems. For example, competition would:

Impair the New Attack Submarine Design/Build Process. The New Attack Submarine is the first shipbuilding program to use an integrated product and process development approach, i.e., "design/build" process. The key to this approach is early and extensive involvement of all concerned in the design. Specifically, integrated multi-disciplined teams consisting of designers and waterfront personnel from Electric Boat, working alongside Navy personnel and suppliers, bring design, manufacturing, operational and logistics expertise together to create a design which will be efficient to produce and operate. This approach has proved successful in the commercial sector (e.g., the Boeing 777 aircraft).

Free and open communication is essential for the process to work. A decision to compete New Attack Submarine production would have an immediate and chilling impact on communications between design/build participants. Electric Boat no longer would have any incentive to be open and forthcoming with the Navy, knowing that all information would be provided to Newport News Shipbuilding. Additionally, Electric Boat would be more likely to hold back many innovative ideas for their own use in preparing their production contract bid. Also, government communications with Electric Boat necessarily would be constrained in order to ensure a "fair" competition, not susceptible to successful bid protests.

Undermine Shipbuilder Responsibility. Under the current design/build process, Electric Boat, as both designer and shipbuilder, will be responsible for managing and mitigating the impact of design data revisions on the lead ship construction process.

Newport News cannot be held responsible for the New Attack Submarine design or the impact of design revisions on the construction process unless the Navy pays Newport News to repeat the New Attack Submarine design. Avoiding this large and duplicative expense while conducting a "fair" competition (i.e., equal terms and conditions) for the lead ship requires the Navy to relieve Electric Boat of design responsibility—destroying another major benefit of the design/build process.

When the Navy is responsible for design data, shipbuilders establish elaborate, expensive and time consuming data review systems to cull out data revisions used to assert contract changes. Determining contractual responsibility and pricing out the impact of these data revisions frequently entails contentious negotiations and numerous, unproductive disputes.

Impede the Design Process. If Newport News were to win, some of the problems experienced in the *Seawolf* program with split design responsibilities could recur without the transfer of the design to Newport News (which would be disruptive, expensive, and time consuming). Specifically, disagreements over priority of design work to support construction, different design philosophies, different computer-aided design/construction tools, different part numbering systems and the like would bog the program down with costly, unproductive administrative burden. All these costs would be charged to the Navy as guarantor of New Attack Submarine design products.

The current Navy plan for awarding a design/build contract to Electric Boat would avoid the above problems.

SUMMARY

The integrated design/build process at Electric Boat for New Attack submarine facilitates:

- incorporation of innovative, cost saving ideas; and
- management and impact mitigation of design data revisions by the shipbuilder.

A decision to compete the lead New Attack Submarine will likely preclude the Navy from receiving these benefits.

ATTACHMENT D—NAVY SUBMARINE ACQUISITION PLAN

- Navy Submarine Acquisition Plan—The Lowest Cost Approach with Acceptable Level of Risk.

— The final *Seawolf* submarine (SSN–23) is budgeted in 1996. Because SSN–23 already is more than one-third funded, it is the lowest cost attack submarine the Navy can build now. SSN–23 supports the Joint Chiefs of Staff military requirement for attack submarine quieting and is key to maintaining the mix of skills and suppliers needed to initiate building a class of more affordable "New Attack Submarines" starting in 1998.

— The New Attack Submarine design builds on important *Seawolf* technological advances. Through innovative design concepts and a procurement plan that closely integrates the work of designers, builders, and suppliers, the cost of a New Attack Submarine will be close to that of a new 688 class attack submarine.

— This plan is the lowest cost way to sustain the industrial base for submarines and components (both nuclear and submarine-unique) and enable transition to an affordable attack submarine fleet capable of meeting the threat. Moreover, the Navy's plan implements the DOD strategy for acquisition of nuclear warships.

- The DOD Nuclear Warship Acquisition Strategy Provides Invaluable Leverage and a Hedge Against Uncertainty. This strategy maintains two nuclear capable shipbuilders—Electric Boat Division with submarines—and Newport News Shipbuilding with aircraft carriers.

— The Navy is well into implementing this strategy. To reduce overhead and ship costs, Electric Boat is continuing to re-engineer organizations and processes. This effort, coupled with the high aircraft carrier construction and overhaul workload the

Navy is directing to Newport News, helps both companies survive while providing ships at reasonable cost.

— The strategy provides both a hedge against an uncertain future and invaluable leverage that come with having the option to compete. Moreover, keeping two nuclear capable shipbuilders is consistent with other defense industrial strategies; e.g., the United States has five major conventional surface shipbuilders and six military aircraft suppliers.

- Attach submarines will remain vital to national security.

— The United States, as a maritime nation, needs a strong Navy, and attack submarines will continue to fulfill a crucial, unique and versatile role.

— Attack Submarines are in high demand by our operational CINCs today. The attack submarine fulfills critical peacetime roles that include regional surveillance, intelligence collection, joint naval exercises with our allies, counter-narcotic operations, and other operations, all contributing to our naval forward presence.

— The DOD position is to maintain a force level of 45–55 attack submarines. The Joint Chiefs of Staff have mandated that 10 to 12 submarines have *Seawolf*-like stealth by the year 2012.

— For the first time since *Nautilus* put to sea, the United States no longer has the clear advantage in acoustic stealth. There are Russian submarines at sea and under construction that are quieter, at some speeds, than our improved 688 class submarines. Despite our advantages in combat systems and crew training, this loss of advantage in acoustic stealth reduces the margin of overall U.S.-to-Russian submarine superiority to its lowest level in history, a condition we are determined to reverse.

— Around the globe, regional powers recognize that submarines can radically change an entire defense equation at a relatively small military cost. This understanding is the driving force behind the global proliferation of modern diesel submarines and weapons to these regional powers. Today, there are over 25 modern diesel submarines in construction world-wide. The rationale behind this trend is easily understood: submarines are the original and ultimate stealth weapon system—one that can be adapted for an unlimited range of missions.

- The Navy must achieve a continuous and efficient submarine production rate by 2002 to sustain the required attack submarine force levels.

— Starting in 2011, our remaining 688 attack submarines will reach the end of their service life at a rate of 2 to 4 per year. Given the time span to construct a submarine—coupled with the fact that future build rates will be at a low rate of production—we must begin building the new class of submarine as soon as we can, 1998.

— Reaching low rate production by the turn of the century will satisfy vital military requirements and sustain our ability to build submarines, and do so affordably.

— Timely delivery of New Attack Submarines in the next decade is essential for our crews to gain the operational experience necessary to use these ships effectively against a greatly improved potential adversary.

- The challenge is to sustain the industrial base as it shifts to a more affordable attack submarine. The last submarine authorized was SSN–22 in fiscal year 1991, and the new design (the "New Attack Submarine") will not be ready to build until fiscal year 1998.
- Authorization of SSN–23 in fiscal year 1996 is needed as a "bridge" to the New Attack Submarine.

— This third and final *Seawolf* class ship is the most economical and low risk option for maintaining critical submarine industrial base technologies and skills until New Attack Submarine construction can begin in fiscal year 1998.

— Already one-third funded, SSN–23 will be a relative bargain to complete.

— SSN–23 supports the JCS requirement for 10 to 12 attack submarines with *Seawolf*-level quieting by 2012.

— Building another 688 class attack submarine would neither sustain state-of-the-art technology nor meet projected military needs because of the 688's increasing vulnerability to detection and lack of margin for improvement or adaption.

- The New Attack Submarine design is technologically robust and provides the best balance between cost and capability (as confirmed by OSD-initiated Independent Review Group). The New Attack Submarine:

— Will retain *Seawolf* quieting specified by the JCS—at a cost near that of a new 688I.

— Is being designed to achieve the lowest cost possible commensurate with required military capability. For example, reduced speed allows lower acquisition and life cycle costs through simplification, producibility improvements, and new technology (e.g., fewer components, enhanced modular construction, new electric plant design, and life-of-ship core).

— Is being designed with flexibility to adopt future advanced technology. Reconfigurable spaces and modular construction enable adaption to different systems/missions in future ships.

— Will incorporate the best state-of-the-art technology that has become available since the need for a more affordable attack submarine was recognized in 1988.

- Proceeding in fiscal year 1998 with building the lead New Attach Submarine has been endorsed by numerous studies over past 2 years by JCS, OSD, Navy, RAND, and the OSD-initiated Independent Review. (See note last page.) These studies have converged on the following:

— Need to build attack submarines that are both affordable and capable to replace 688s ending life in large numbers early next century, even with greatly reduced force level.

— The submarine industrial base and the industrial bases for nuclear and submarine-unique components need a commitment to long-term stable submarine production; it has drastically downsized and is nearing the breaking point. Moreover, shutdown and restart is not practicable; e.g., restart would be necessary shortly after shutdown to maintain a minimal attack submarine force level.

— An fiscal year 1998 lead New Attack Submarine start, together with fiscal year 1996 authorization of a "bridge" submarine is the most cost effective approach to maintaining U.S. submarine design capability and industrial base.

— Deferring the New Attack Submarine beyond fiscal year 1998 would increase total New Attack Submarine program costs and risk; and there are no technological breakthroughs or potential cost reductions on the horizon to justify delaying the New Attack Submarine.

- The Navy's plan will provide a capable and affordable replacement for 688 class attack submarines as they reach the end of their service lives in large numbers early in the next century. The Navy plan allows maintenance of an attack submarine force level of 45–55 attack submarines and regains the edge in technology and quieting.
- The Navy plan preserves the critical design and production components of the nuclear submarine industrial base as national assets. The loss of a nuclear capable shipbuilder represents an inordinate risk to the Navy's ability to meet U.S. national security needs over the long term. The loss of such a shipbuilder would remove the Navy's ability to ramp up production in response to changes in the world threat, remove the economic stimulus of competition whether implicit or not, and leave no capability in response to natural or other unforeseen disasters.
- Fiscal year 1996 and later budgets fully fund a fiscal year 1998 lead New Attack Submarine and fiscal year 1996 final *Seawolf.*

CONCLUSION

- The United States must retain the ability to build advanced, quiet nuclear submarines in sufficient numbers to ensure our present and future undersea superiority. The nuclear shipbuilding industry must be able to economically produce submarines at the low production rates required today and also support higher rates of production to meet future uncertainties.
- The Navy's integrated nuclear shipbuilding plan preserves two national assets capable of responding to future need.
- The Navy's plan for low-rate production of New Attach Submarines beginning in fiscal year 1990 and authorization of SSN–23 in fiscal year 1996 will:

— minimize submarine construction costs and risk over time;

— preserve the industrial bases for submarines, nuclear components, and submarine-unique components; and

—enable transition to an affordable, capable, and flexible attack submarine fleet.

NOTE: Studies include:

— March 1992 Report on Preservation of U.S. Nuclear Submarine Capability by Director, Naval Nuclear Propulsion Program and report update in November 1992.

— June 1992 Report on Preservation of the Industrial Base for Nuclear-Powered Submarine Systems by Assistant Secretary of the Navy (RD&A) and report update in November 1992.

— July 1992 Submarine Force for the Future by Joint Chiefs of Staff and update in April 1993.

— September 1993 Bottom-Up Review and January 1994 annual report to the President by Secretary of Defense.

— June 1994 RAND Corporation Report "Planning Future Submarine Production".

— May 1994 USD(A&T) Independent Review Group Report on NSSN.

Senator COHEN. Gentlemen, I am going to ask that we adhere to a 6-minute rule so that most of us can get at least one round of questions in before we have to vote. Then we will have as many rounds as necessary to complete the examination of this panel.

I will begin with Secretary Slatkin.

Senator LOTT. Are you going to question Secretary Slatkin before we hear from the Admirals?

Senator COHEN. I do not believe they are going to be testifying. I have asked Secretary Slatkin to give the opening statement.

Admiral DeMars, do you want to testify?

Admiral DEMARS. I have a very brief statement, if I might. Senator Cohen: Sure.

STATEMENT OF ADM. BRUCE DeMARS, USN, DIRECTOR, NAVAL NUCLEAR PROPULSION

Admiral DEMARS. Thank you, Mr. Chairman, for the opportunity to speak on this important issue.

The matters at hand this year are the most important to the future of naval nuclear propulsion that I have seen in 7 years in this job.

Ms. Slatkin's statement more than adequately frames the issues. I would like to briefly add my perspective and place the current debate in a larger perspective.

Following the demise of the Soviet Union and the end of the Cold War, immediate reductions were made to the nuclear submarine building program. Twenty-seven *Seawolf* submarines, five Trident submarines, and six Los Angeles class submarines were canceled from the program for the nineties.

That represents about $70 billion worth of shipbuilding. No submarines were planned following 1991.

Clearly, unless thoughtful aggressive action was taken, we stood a good chance of losing the ability to economically build nuclear submarines in this country. Since the aircraft carrier nuclear components are built by the same industrial base, there would be an impact on that vital segment of our Navy.

We did take action. We downsized the nuclear supplier base quickly and efficiently. Contractors were combined. Companies left the business. No additional budget authority was required. As best we could, we took care of the people who had worked in this industry for so long.

We worked with the remaining suppliers to get more efficient, as they moved from high rate to low rate production. This involved rewriting our specifications, changing our quality control systems, seeking more shop floor involvement and a host of other actions.

All this, of course, required great care since producing nuclear power plants is a highly technical business.

We have made great strides, and I am proud of the major change we have effected with industry cooperation over the past 4 years. But without a product, all of the efficiencies in the world is of course for naught.

So we aggressively and concurrently began the development of a follow-on to *Seawolf*, the New Attack Submarine, designed to provide adequate capability at less cost.

Here we pioneered another change in the way we had done business, the design/build approach. Most simply, it closely involves shipbuilder waterfront production trades, design engineers, key suppliers, and the government in a process that is more efficient.

While we are moving out aggressively in the New Attack Submarine design, the soonest authorization is fiscal year 1998, according the need for two more *Seawolf*s, one already authorized and one in this year's request.

About ten outside studies have reported on this plan and all converge on it being the most cost-effective means of continuing to supply nuclear powered submarines.

Congress has provided key support with the second *Seawolf*, additional funding for the industrial base, and research and development support for the New Attack Submarine.

We are here today at the final point. The last issue is competition for the lead New Attack Submarine. Ms. Slatkin has clearly provided the Navy rationale for deferring competition now in order to preserve the ability to compete later on.

I would end by saying we are talking about two fine shipyards. Both build fine submarines. I wrote each of you regarding the successful sea trials of U.S.S. *Maine* from Electric Boat in April and of U.S.S. *Tucson* from Newport News earlier this month.

In both cases, we completed each trial in record time, testament to the quality of the management and trades at each yard.

Both yards are finishing their few remaining submarines, and Newport News is constructing three nuclear powered aircraft carriers. But both shipyards are doing much more in this vital business of supporting naval nuclear propulsion.

Today, Electric Boat is doing reactor servicing work in Upstate New York at my land-based prototype reactor sites. Newport News is doing similar work in Idaho. Newport News is supplying radiological controls technicians for the shutdown of Mare Island Naval Shipyard and Charleston Naval Shipyard.

While Electric Boat is using their unique expertise in the design/build process for the New Attack Submarine, Newport News is using their special skills in preparing for refueling the first of the *Nimitz* class aircraft carriers.

Both yards are national resources. Nuclear powered warships are the most complicated things built in this country.

At this point of significant turmoil and in the aftermath of impressive reductions, it is in the best interests of the nation to maintain both shipyards. The long-term cost premium is low, and the near-term payoff is high.

Thank you.

Senator COHEN. Admiral DeMars, thank you very much.

[The prepared statement of Admiral DeMars is joint with Ms. Slatkin.]

Senator COHEN. I did not mean to preclude you from your statement. It was a fine statement. And in view of your statement, I will reduce the time that we question to five minutes each to make sure that each of us has a chance before we have to rush over the floor and begin voting.

Secretary Slatkin, can the Navy in fact achieve the 10 to 12 submarines, stealth submarines, by the year 2012 without *Seawolf*, the third *Seawolf*?

Ms. SLATKIN. The answer to that question, Senator, is as follows: You could create a set of conditions where we could reach the rate of 10 to 12 by the year 2012, but that would be a condition where we would have to buy a lot more submarines, one more than we would plan, in the period of time to get to 2012.

My short answer to you is that our plan with SSN 23 and with the introduction of New Attack Submarines is the smoothest way to get us to 10 to 12 submarines by the year 2012.

Senator COHEN. Can Electric Boat survive until 1998 without the third *Seawolf*? In other words, is there sufficient work at E.B. to allow them to continue at efficient production levels with their force coming down substantially? I think it is about a 75-percent reduction from where they have been to where they are going to be.

Could they continue to survive economically without a third *Seawolf*?

Ms. SLATKIN. We looked at that carefully, as I said, during my testimony. Without the third *Seawolf*, we would have to put additional work at Electric Boat, if you were to continue to build the New Attack Submarine there.

Our assessment is it would be a fair amount of money, as I said during my statement, and we would not yield a submarine as a result of it.

Senator COHEN. All right. And Newport News has also asserted, and I believe there will be testimony later this morning, that the Navy has deliberately taken repair work out of Newport News and thereby deprived it of being in a somewhat competitive position to maintain its force levels at efficient rates.

What kind of repair work has been taken from Newport News to your knowledge, and why was this done, if so?

Ms. SLATKIN. I am not aware of repair work that we have moved from Newport News to one of our naval shipyards. That would be the only place where we would move it.

Senator COHEN. Admiral DeMars?

Admiral DEMARS. Mr. Chairman, I am not aware of that. There had been off and on public/private competition, and Newport News has played in that, when appropriate. But we have never taken work away from Newport News in recent memory.

Senator COHEN. Could you explain, Secretary Slatkin, how competitive leverage can be achieved if only one yard builds subs and the other builds nuclear carriers?

It would seem to be contrary to the suggestion in part of your statement that if you do not use it, you lose it. And so the skills that would be necessary to build submarines would be lost at Newport News. And certainly those to build aircraft carriers would not be acquired by Electric Boat.

So how down the line, if you go three, four or five ships, do we remain a competitive edge in that regard?

Ms. SLATKIN. First, let me say that the work force we are talking about are nuclear-certified workers. I want to make that point clear.

Nuclear-certified workers are a work force that build carriers as well as submarines. Those are skills I worry about retaining, the skills I worry about losing. If lost there would be the additional cost and time to retrain people.

Our assessment is that 85 percent of the trade skills needed at Newport News to build submarines are used and employed in the production of nuclear carriers and carrier overhaul work.

We believe that given this policy, we are able to sustain 85 percent of the trades that would be required for future nuclear submarine work.

Senator COHEN. Now you have indicated, I think, on one of your charts that the short-term costs of canceling the third *Seawolf* and then transferring that to Newport News would involve anywhere from $650 million to roughly $1.1 billion, correct?

Ms. SLATKIN. Yes, sir.

Senator COHEN. And this factors into your conclusion that there is roughly a three-percent premium over the lifetime of this particular approach. Is that how you arrive at that three-percent premium, by concluding that you——

Ms. SLATKIN. As I understand the analyses, the costs of shifting are included in our estimates. Yes.

Senator COHEN. Okay.

Ms. SLATKIN. But, as Admiral DeMars just mentioned to me, they do not dominate, given that you are talking about $40 billion over this period. The $1 billion difference does not dominate.

Senator COHEN. The GAO has indicated that you could refuel nine 688 class submarines, extend their lives, and you could then buy 14 fewer subs and save $17 billion. The Navy rejects this particular analysis. Perhaps, Admiral DeMars, you might be the one to respond to this.

Admiral DEMARS. Yes, sir. You would basically be paying for an outdated platform. If we refuel the class before the 688, the 637 class, we would save even more money but even more outdated. It just would not keep up in the technological underwater race.

Senator COHEN. My final question in my time, the Navy was invited, and I believe also Electric Boat was invited, to share in an analysis or study done by CRS and chose not to do so. Could you explain the rationale for that?

Ms. SLATKIN. Let me first say, Senator, that I have tried in every possible way to provide data to CRS to give them everything that we have. Let me describe my dilemma.

Much of our data that CRS has asked for is proprietary information noted by the contractors, not by the government. The contractors have given us information and have called it business sensitive or proprietary.

The law prohibits me from handing that information over to CRS. If the contractors would be willing to agree for me to release that data, I would be happy to. But the law, the statute that you have written, prohibits me from doing it.

I went back to both contractors, explained the dilemma, and said, "This is not my decision that this is proprietary; it is yours. Could you find a way to remove the markings here so that we can be responsive and give CRS the data?" because both contractors are providing it directly. The answer was no.

Senator COHEN. Both contractors refused to give you that permission?

Ms. SLATKIN. We were unable to get that permission from both contractors. So the bind I am placed in is the law prohibits me from providing that data.

Senator COHEN. What if only one contractor objected? Would that preclude you, also?

Ms. SLATKIN. I cannot——

Senator COHEN. What if Newport News said okay, but E.B. says no?

Ms. SLATKIN. I can only release data that the contractor gives me the ability to release.

So if one of them were to say, "That is fine. Release the data," I would be able to release their portion of the data.

But I have been unable to get agreement on this. As a result, we have given CRS every possible piece of data that I am aware of, and I have been personally involved in this to make sure that it has not just been pushed aside.

Senator COHEN. Thank you. My time has expired.

Ms. SLATKIN. Thank you.

Senator COHEN. Senator Kennedy, who has, I believe, an opening statement——

Senator KENNEDY. No. I will put it in the record, Mr. Chairman.

I just want to welcome our witnesses here and look forward to questioning at the appropriate time.

Senator COHEN. All right.

[The prepared statement of Senator Kennedy follows:]

PREPARED STATEMENT BY SENATOR TED KENNEDY

Mr. Chairman, I commend you for calling this hearing on the future of the Navy's submarine acquisition program. During the cold war, the primary mission of our attack submarine fleet was to prepare for the threat of conflict with the Soviet navy. After the fall of the Berlin Wall and the break-up of the Soviet Union, the question is whether the Navy still faces threats that require us to continue building attack submarines.

I believe the answer is yes. Many of the long-standing tasks of attack submarines are still essential, such as patrolling the high seas and countering hostile submarines. In addition, new tasks are emerging, generated by the Navy's new offshore warfare strategy and by the challenges we face from the submarine fleets of new nations in the undersea arena, including Iran and North Korea. These tasks include capabilities for surveillance and reconnaissance, launching cruise missile strikes, covert mining of harbors and coastal areas, and the deployment and withdrawal of special operations forces.

For all these reasons, the Bottom-Up Review of the Department of Defense concluded that the United States should continue to procure attack submarines over the next two decades.

Our focus during this hearing is how to acquire the necessary capability for the Navy at the best value for the taxpayer.

I join in welcoming our three panels of witnesses this morning, and I look forward to their testimony on the most cost effective-way to procure a modern fleet of attack submarines.

Senator COHEN. Senator Lieberman.

Senator LIEBERMAN. Thank you, Mr. Chairman.

Let me just state very briefly for the record first, as we talk about the importance of submarines to our future national security, we focused on the Russian program.

But the fact is that I believe there are 44 nations out there that have more than 600 subs in the water right now. A lot of them are not exactly our best friends in the world.

The Iranians are buying Kilo class subs from the Russians, which they will have in the Persian Gulf. And any future conflict that we may have there or any offensive program, they may have to disrupt mercantile traffic.

The Chinese are developing a program. This is a very critical area for our national security.

I want to come first to a point that Senator Lott, and there was some disagreement about the percentage. But clearly, maybe you can answer. What is the percentage of the shipbuilding program for this year that goes to submarines?

Ms. SLATKIN. In the SCN budget for fiscal year 1996, 44 percent goes to submarines.

Senator LIEBERMAN. Okay. But my point is not so much the exact percentage. Of course, it is a significant percentage, but that is the percentage this year. That would not have been the case last year, I presume.

Ms. SLATKIN. In fiscal year 1995, the percentage of the shipbuilding budget that went to attack submarines was zero.

Senator LIEBERMAN. And what percentage—I do not know if you have it—went to aircraft carriers in last year's budget?

Ms. SLATKIN. In fiscal year 1995, the percentage of the shipbuilding budget that went to carriers was 54 percent.

Senator LIEBERMAN. Fifty-four percent.

Ms. SLATKIN. Yes, sir.

Senator LIEBERMAN. So last year it was actually ten percent more for carriers than this year for subs. The point I am making is that, as you made in your testimony, the last time we authorized a submarine was 1991.

And obviously, I do not want the record to give skewered understanding of how much of the long-term budget of the Navy, even allowing for the central role that the Navy, and I think most security planners, feel subs will have, will be investing in submarines.

The fact is that you have a broader set of interests here, and in a very limited budget, you spread the money around.

Secretary Slatkin, I just want to make clear here that the views that—perhaps these are obvious questions, but that the views that you have shared with us in your opening statement are in fact the views of the Chief of Naval Operations, Admiral Boorda, is that correct?

Ms. SLATKIN. Yes, sir.

Senator LIEBERMAN. Our senior military officer in this country, Chairman of the Joint of the Chiefs of Staff, General Shalikashvili, is that correct?

Ms. SLATKIN. Yes, sir.

Senator LIEBERMAN. And they represent the views of the senior civilian leadership of the Navy and the Department of Defense, including Secretary Dalton and Secretary Perry.

Ms. SLATKIN. Yes.

Senator LIEBERMAN. So we have the entire military leadership sharing the conclusions about our national security, which you are expressing.

Ms. SLATKIN. As you know, Senator, these decisions were made in the Bottom-Up Review by the Secretary of Defense and concurred in by the Chairman of the Joint Chiefs.

Senator LIEBERMAN. Let me come first to the SSN–23 and the decision that we have to make there. As you know, some people have suggested that there are better and cheaper alternatives to bridge the 7 year production gap, which exists between the last submarine we authorized in 1991 and the New Attack Submarine in 1998. You made some reference to this in your opening, which I appreciate.

I just want you to go into a little more detail as to whether you have looked at any of those other options and whether you have—what is the basis for what I take to be your conclusion that there are not less costly and effective alternatives to the third *Seawolf* as the bridge to the New Attack Submarine.

Ms. SLATKIN. We essentially set two key parameters or metrics to measure each of these set of alternatives against. One of the parameters for the Navy Department has to be whether we get a warship at the end of the process, and second has to be what the costs are over the period of time.

We looked at every possibility, including overhauling 688s, as Admiral DeMars talked about, putting just some work at the shipbuilder to keep the tradesmen busy over the period of time, as well as shutting down the shipbuilder and reconstituting when required.

In each of those cases, there are associated costs. Each one of their costs are relatively in the same range.

Yet, at the end of the day, the only option that delivered us a warship was the option to build SSN–23. So as we compared each of the alternatives, it was clear that there would be costs under any circumstances.

Now one can argue about our estimates, but there would be costs under any circumstances. What would be the yield? In the case of the SSN–23 option, that was the only option where we got a needed warship at the end of the day. Hence, this is why we say that is the most cost effective, not necessarily the cheapest, but the most cost effective option. It is the only way of sustaining two nuclear capable shipbuilders.

Senator LIEBERMAN. My time is up, but I think it is a very important point you make, which is that the building of the SSN–23 is not just to maintain the industrial base, to get the bridge to the New Attack Submarine, but we end up with something, which is the most capable, the most effective attack submarine ever built that that will be out there for 40 years.

Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Lieberman. Senator Warner.

Senator WARNER. Thank you, Mr. Chairman.

Madame Secretary, I do not dispute for a minute the national security need for a new class of submarines. What I do strongly dispute is this unilateral decision in the executive department, with no consultation, that I can determine, with the Congress, that it is going to be done your way.

And I suggest to you that Congress is going to have a voice and that your way may not be the final decision, because I have to say this theory that you are preserving two nuclear capable shipyards, while it sounds good, it is phony, because Groton cannot build carriers. It is as simple as that.

And if you strip Newport News Shipbuilding of 40 percent of its business, which is essentially the submarine construction business, the directors and stockholders of that company have to decide: Do we want to continue in the shipbuilding business?

And where would you go to build the carriers? There is no place to go. There is one naval shipyard that possibly could begin. So this whole thing is wrong, and it is phony.

And to say that we are going to charge the American taxpayers something like three percent premium to keep two yards open and convey the thought that, well, we could call up Newport News at some point in time and say, "How about building us a couple of submarines because you are nuclear capable," that is ridiculous.

The base to build those submarines will atrophy and, for purposes of corporate fiscal management, has to be sloughed off.

So I just do not understand it. And let's go back to this three percent. What if your numbers are wrong? And there is a history of numbers being wrong. And I say that with no disrespect to your office. They were wrong when I sat where you are now sitting many years ago.

You said it is worth three percent or $1.3 billion to keep two yards open. Now I ask you: If that was wrong, is it worth six percent or $2.6 billion or nine percent or $3.9 billion or 12 percent or $5.2 billion? When does it become too expensive to keep the two yards open?

Ms. SLATKIN. That is obviously a judgment that, as you say, Senator Warner, the Congress, acting as our board of directors in the department, needs to make.

The clear judgment that Dr. Perry made and the Department of Defense made was that the premiums, as we understood them, were worth that cost to sustain two nuclear capable yards.

Senator WARNER. If there is anything of value to sustain them. I mean, it is as if you are saying that one yard can shift its work to the other if necessity is driven.

You are saying to the taxpayers, "You pay this premium so that you have two nuclear capable yards." It sounds great. But in fact, they are totally different yards building totally different types of ships. And I am going to have to analyze that your 85 percent of the carrier construction is directly transferable to submarine construction. I have never heard that. Maybe with the people that do the reactor or some of the welding work.

But as you well know, building a submarine is a very complex thing, and you cannot expect Newport News to maintain its infrastructure depending on the spin of a roulette wheel many years hence when you suddenly decide you need a submarine out of Newport News.

If it is the decision of this President—and, believe me, you know and I know it was the decision of this President to go to this two yard policy—and while my good friend points out that the Chairman and CNO and all have saluted marched off, they have done that in the spirit that their Commander in Chief has said it. And they are going to try and make it work.

But they may try and make it work in a way that is terribly costly to the American taxpayer. We may be faced now with the decision: Do we keep one yard?

That is really the bottom line here, because our defense budgets do not allow us to have these premiums. You are three percent. That is the low, bottom-line figure. It may crawl up to a higher percentage.

I suggest that we are going to have to look at whether or not we can keep this one yard or two yard policy. And basically what we are suggesting is, if you want to keep it and you want to charge the taxpayers this 3 percent, then you should let the taxpayers have the benefit of an open and fair competition between these two yards for this next class of attack submarines.

Now if either of you have any comments on what I have had to say, I would be happy to—I would like to have Admiral Lopez's view, because I have known you to be a fair and objective analyst. And at the bottom of your heart is the welfare of your great Navy.

Admiral LOPEZ. Are you suggesting Admiral DeMars is not fair and objective?

Senator WARNER. Well, I am not suggesting anything.

Admiral LOPEZ. Only this issue. [Laughter.]

Senator WARNER. Go ahead, Admiral Lopez.

Admiral LOPEZ. As a requirements officer, sir, I worry about what we have across the spectrum. I look at what the inventory of submarines, since that is what we are here to talk about.

Senator WARNER. Admiral, we agree on that.

Admiral LOPEZ. I do worry about capability out there.

Senator WARNER. Well, do you think that if suddenly Newport News decided it was going to go out of the carrier business, that somebody can pick that up? I mean, that is what you are paying three percent to keep two nuclear yards viable.

Admiral LOPEZ. I would worry about anything that would delay our procurement of submarines or any other warships, sir, that would delay our readiness for the future. I believe the decisions we make should give us the most cost-effective solution.

Senator WARNER. Is that not competition, straight, level, playing field competition?

Admiral LOPEZ. Sir, you would think that competition in general is the best way to go, but the decisions that have been made by the Secretary, obviously, I have to support.

Senator WARNER. That is what I wanted to hear. Thank you very much.

Admiral LOPEZ. I do not mean it quite that way, Senator. [Laughter.]

Senator WARNER. Well, that is all right.

Admiral LOPEZ. You misinterpreted what I said.

Senator COHEN. Why do you not clarify what you meant?

Senator WARNER. My time is up, Mr. Chairman. [Laughter.]

Senator COHEN. Your time is up, but his is not.

Why do you not clarify what you meant, so we will not have a record that can be taken out of context?

Admiral LOPEZ. Yes, sir. We have what I think is a good solution. I am concerned, as I said, that we not delay the procurement of submarines.

I believe that if you delayed or shifted the contracts, from what I know, you would delay the procurement of the New Attack Submarine as much as 2 or 3 years, which would affect our inventory and perhaps our readiness. And, that is a concern of mine.

Senator WARNER. If we can show that there is not that delay, would you have a different view?

Admiral LOPEZ. Yes, sir. I would have to look at that. Yes, sir.

Senator WARNER. Thank you.

Senator COHEN. The committee will stand in recess until we can complete this vote and then return. At that time, I will recognize Senator McCain, or indeed, if Senator McCain gets here first, he can call the meeting to order. And he will ask questions at that point. [Recess.]

Senator COHEN. The subcommittee will come to order. Senator McCain?

Senator MCCAIN. Thank you, Mr. Chairman.

Ms. Slatkin, the GAO in their report says there is significant disagreement about a number of issues, including Russia's defense spending priorities, Russia's ability to maintain its operating tempo and readiness and maintenance levels, and the future Russian force structure levels and production programs.

The Navy report does not address other factors that should be considered in determining the overall superiority of U.S. and Russian submarines, such as sensor processing weapons, platform design, tactics doctrine and crew training.

Are you aware of the GAO's research and of the disagreement within the intelligence community about the Russian submarine threat?

Ms. SLATKIN. I am aware of the GAO's report. I am aware of the various views in the intelligence community, and I would be happy to discuss them with you in either open or closed session.

Senator MCCAIN. I am not privy to classified information on this issue, and I have chosen not to be. I would like to discuss just in open session that you know that there are significant disagreements within the intelligence community about the degree of the Russian submarine threat.

Ms. SLATKIN. There are not significant disagreements within the community.

Senator MCCAIN. There are not?

Ms. SLATKIN. There are not significant disagreements about the degree of the Russian threats Senator. My understanding is that there is no disagreement about the statement I made before you today concerning how many submarines there are in the water.

There is no disagreement about whether they are more quiet than we are. The only question, and I would call it a question, is future building rates. What number you assume that they will build in the future. That is the best of my understanding, and I do not believe that that is a significant difference.

Senator MCCAIN. There is no disagreement about Russian intention, about their deployment schedules, about their readiness, and about their commitment to this program? There is no disagreement within the intelligence community on those issues?

Ms. SLATKIN. Senator, to the best of my knowledge—and I want to say this very carefully to you—my understanding of the disagreement is about what future rates they might build at. I am not aware of any issue on intention. I will certainly go back and check, but I am not aware that there is a disagreement in that regard. Admiral Lopez, are you?

Admiral LOPEZ. No, I listened to Ms. Slatkin's brief and concur with what she said with regard to the possible Russian building rate. As I mentioned to Senator Warner, we in the Navy are most concerned about capability, because intent can change.

Senator MCCAIN. Well, we are getting into a semantic discussion. There are disagreements within the intelligence community about Russian capabilities, about their priorities.

It does not take a nuclear expert to look at what the Russians are doing right now in Chechnya and what their priorities are as far as the preservation of the former Soviet Union is determine that their priorities are probably not that of building quiet and more expensive submarines. But that is not just my view.

That is the view of numerous observers and experts on the former Soviet Union.

Admiral DeMars, I believe that the GAO estimate of $17 billion in savings from refueling nine 688s assumes buying of 16 New Attack Submarines versus 30. Do you disagree with that proposal and those facts?

Admiral DEMARS. I am sorry. I did not understand the question, Senator.

Senator MCCAIN. Well, let me quote to you from the GAO report.

"Under our second alternative, the Navy would extend the service of 9 refueled SSN–688s and build 14 fewer submarines than planned. This approach saves about $17 billion in procurement costs after accounting for the third overhaul of 9 submarines. It also allows the Navy to maintain a force structure of about 55 SSNs through the year 2015."

Admiral DEMARS. Yes, sir. I understand the question now. The issue there was the fact that the submarine force is deemed to be bigger than it should be today. We have about 84 attack submarines.

The decisions out of the Bottom-Up Review were to have a force of 55 by 1999. The 637 class submarines will go away at their normal end of service life before that; however, we would still have some 688 class submarines that would put us over that number.

So the only way we get down to that number is to decommission about ten 688 class submarines before the end of their normal service life. That is strictly to get down to a force level of New Attack Submarines. But that issue is detached somewhat from the issue of keeping the nuclear submarine industrial base alive.

It comes together when the GAO says that by keeping those submarines around, you keep your force level up for sometime longer. You do, but your industrial base goes away. And so the chickens come home to roost a little later.

Senator McCain. Are we not retiring SSN–688s before their service life is extended anyway—I mean before the expiration of their service life anyway?

Admiral DeMars. Yes, sir, about ten of them.

Senator McCain. About ten of them.

Admiral DeMars. Yes, sir.

Senator McCain. And why are we doing that?

Admiral DeMars. In order to get down to the mandated force level of 55 submarines by 1999.

Senator McCain. And yet, then, we have to build new *Seawolf* submarines while we are retiring perfectly good submarines years early.

Admiral DeMars. But we are building—between now and the year 2002—and I do not want to use too many numbers, but between now and the year 2002, we are building about a half a submarine a year.

So their incremental addition to the force level is just mimimal. It is minuscule. The issue is keeping the building base alive and maintaining the force level that we have been told to maintain, which is somewhere between 45 and 55.

Senator McCain. Ms. Slatkin, you emphasized in your testimony the importance of competition between shipyards for the construction of nuclear submarines.

Do you have that same concern about construction of nuclear carriers?

Ms. Slatkin. Senator, we have an interesting situation with our nuclear carriers and with our overhauls of our carriers. And as Senator Warner said, at this juncture, Newport News is the one facility that is able to build and construct our nuclear powered carriers.

In the case of our overhaul and refuelings, however, we have a naval shipyard that has the capability to refuel. It is the Puget Sound Naval Shipyard.

We have chosen as a policy decision not to refuel there, so that we can sustain a workload level at Newport News.

Senator McCain. Maybe I should repeat the question. Are you concerned about the fact that there is no competition among shipyards for construction of nuclear aircraft carriers?

Ms. Slatkin. In an ideal world, Senator, you would like to use the marketplace wherever you could.

In this particular case, we have one facility right now, which is able to construct an aircraft carrier. If I had more than one facility right now that would be able to construct an aircraft carrier without infusing it with a lot of government money, I would prefer to compete.

Senator McCain. But not unlike the submarine problem, we are building so few nuclear aircraft carriers that it is virtually impossible to maintain two shipyards in operation for the same reason why we are going to face that same crunch on nuclear submarines, which I guess is what led you to the conclusion that nuclear carriers would be built at Newport News and nuclear submarines would be built at Electric Boat.

Ms. Slatkin. We do not have another facility capitalized, to the best of my knowledge, to compete today on the carrier. We have another facility at the Puget Sound Naval Shipyard that could refuel. We have chosen not to use that.

Senator McCain. Thank you, my time has expired.

Thank you, Mr. Chairman.

Senator Cohen. Senator Robb?

Senator Robb. Thank you, Mr. Chairman.

Madame Secretary, let me just ask for the record if you will give us the benefit of the figures you used in making the comparisons where you had 24 attack subs, 4 CVNs, and 4 SLEPS or whatever it was you were using.

Could you give us the whole numbers and the time lines for those just so we can make whatever comparisons are appropriate in terms of our——

Ms. Slatkin. I would be happy to do that, Senator.

[The information follows:]

Department of the Navy,
Office of the Assistant Secretary,
Research, Development and Acquisition,
Washington, DC, May 18, 1995.

Hon. Charles S. Robb,
U.S. Senate,
Washington, DC.

Dear Senator Robb: During the May 16, 1995, hearing on the Navy's submarine acquisition plan before the Senate Armed Services Committee Seapower Subcommittee, you requested additional information from the Navy concerning detailed background material used to develop the "Report On Navy Submarine Acquisition Plan and Assessment of Shipbuilder Proposed Alternative Plan" of May 1, 1995. The Report was an attachment to the Navy written statement.

The information you requested has been provided to Senator Cohen and Senator Kennedy. A copy of the letter forwarding the information to Chairman Cohen is enclosed. As noted in the letter, the information is provided to the Senate Armed Services Committee Seapower Subcommittee as a privileged release under which the information is exempt from public disclosure.

If I can be of any further assistance, please let me know.

Sincerely,

W.C. Bowes,
Vice Admiral, U.S. Navy,
Principal Deputy.

Enclosure.

Senator Robb. Let me come back to a basic question. It is one that has troubled me from the outset in terms of why we are insisting upon two nuclear capable yards.

If this was—if justification was sought under any national security or what seems to me to be a credible taxpayer benefit analysis, I would have no problem with it.

Indeed, one of the reasons that I voted for the second *Seawolf* is essentially the argument that is now being advanced for the third, that it cost, at that point at least it was argued, no less to complete it and then you ended up with a new submarine than it would to have canceled it at the time.

But we are now making the argument not based on the near-term need for submarines—I think that all of the testimony is consistent on whether or not we need the *Seawolf*. Obviously, we would like to have it.

There are a lot of things we would like to have. But in the constraints that everyone has agreed upon, we are not basing this on the near-term need for the *Seawolf* or indeed for an urgent need for the New Attack Submarines, as Senator McCain's questioning and others would indicate.

So we are doing it on the basis of competition, as I understand it. And to come back to the premise that I suggested earlier, why do we suggest there will be better competition, and the only way that we can achieve better competition is to deny competition, not only on the *Seawolf* but with respect to the New Attack Submarine?

I have a fundamental disconnect on that question, and I fail to see how that advances the cause of the United States, the Navy or the taxpayer. Could you elaborate on that question for me, please?

Ms. SLATKIN. I would be happy to. And if I may, I would like to make three points, because I think you asked three very good questions here.

First, let me share with you a little more directly the rationale of Dr. Perry and Dr. Deutch on why sustaining two nuclear capable shipyards, because I think it is an important point that perhaps I have not been able to get across.

Both the Secretary and the then Under Secretary, did a fair amount of research to examine the risks and the costs of bringing back a second yard. They argued that given the uncertainty in the world and the risk and the cost of bringing back such a capability, they were not willing to recommend to shut down and go to one nuclear yard.

Senator ROBB. But what are the circumstances that you posit for the need to bring back a yard? In other words, what kind of demand could one shipyard not satisfy that would require two shipyards?

Give us some sense of the number of vessels that we are asking for and the justification in military terms.

Ms. SLATKIN. The argument was advanced at the time by the military, that if we were ever to face a resurgent Russian capability or rest of the world threat that was considerable in terms of submarines operating around the world, we would need to build at a rate of more than two submarines a year and sustain it, as well as build carriers, that we would need to rely upon two nuclear capable builders.

Senator ROBB. Did you come to the conclusion or find, however, that that could not be done by a single yard?

Ms. SLATKIN. The finding was a clear one, that the risks and the costs were too great.

Senator ROBB. But, again, my question is: Did you find that a single yard could not do what you have suggested is the most serious ramp-up threat in terms of the need for construction?

And if you can just give me some sense of the length of time you are talking about in terms of at some point down the road and how many carriers, submarines, whatever goes into your basis, are you suggesting that we have to be able to produce on an annual basis?

Ms. SLATKIN. May I ask Admiral DeMars to amplify, and then I would like to get back to points two and three, Senator?

Senator ROBB. Please.

Admiral DEMARS. I think, Senator, it is clear that if we had to single up on Newport News, that in the foreseeable future Newport News could supply the number of submarines and the aircraft carriers, possibly not as easily in the numbers that they say, because building nuclear powered ships is a very management-intensive exercise, not just associated with the number of drydocks.

But in the short term, in fact, because we are so involved with the very detailed design process with the other shipbuilder, Electric Boat, in fact Newport News could not step in and pick up that design right now. And so we would have——

Senator ROBB. Was the Congress consulted on the decision to sole source? And if so, at what time and with whom?

Admiral DEMARS. I believe Congress was aware of what was going on. There is great visibility into the process, many briefings, certainly, that I attended. So it was no secret, I do not think.

Ms. SLATKIN. Senator, it was a major piece of the brief done by the Under Secretary at the time, Dr. John Deutch, to each of the four committees on the Bottom-Up Review. We have had two budget requests in front of you on the New Attack Submarine, and they have been clear in their background justification to all of you that we were clearly emphasizing and clearly underway on a strategy with one shipbuilder for submarines and one shipbuilder for carriers. That was a very direct path.

Senator ROBB. There is a difference between information and consultation. But go back to the basic question, if you will. You wanted to have an opportunity to respond.

Ms. SLATKIN. I want to add that in addition to the capability to bring back a shipyard and the risks associated with that, I wanted to add two other points.

The second point is that we have laid out a strategy here for you that demonstrates sustaining two nuclear capable yards.

But we have never said, at least I am not aware that the Navy Department has said, we will not entertain competition. What the Navy Department has said and what I tried to articulate to you this morning was not the question of whether but a question of when.

It is clear that if we were to compete the lead submarine as I hope I convinced you this morning, we would have disruptions in terms of the design. We would have disruptions in terms of the delay in delivery to the fleet. And, we would have had added costs. There is no doubt about that.

There is a set of conditions that we need to have a dialogue about from our perspective about when. We have been dealing with a question of the time. And, I wanted to make that point.

The third point I wanted to make to you, sir, is your statement that the need is not urgent. I believe, if you would ask that question of Admiral Lopez, he might have a different view because largely what we have been driven to is the need to keep building submarines and the need to build them in order to get 10 to 12 stealthy submarines by the year 2012.

That is a requirement that has been given to me, as the Navy's Acquisition Executive, by the Chairman of the Joint Chiefs. That is what I am dealing with, what he says he wants. That is an urgent need in terms of the needs that I face on a daily basis.

But I do not want to speak for the Admiral, but let me say, he can certainly answer that question.

Senator ROBB. Well, I would like to hear from Admiral Lopez, but if you suggest that competition requires denying competition until the opportunity for legitimate competition no longer exists, it seems to me that is an internal contradiction.

Ms. SLATKIN. My suggestion, sir, is that were we to compete initially, we would deny our ability for future competition if Electric Boat would lose. I think that is clear. If we compete initially, we will not bring back a shipyard.

Senator ROBB. Well, at what point does the taxpayer interests in having cost-effective production come into play?

Ms. SLATKIN. Senator, as I have said, the cost effectiveness of our policy not only yields us two nuclear capable yards but yields us a warship. It gives us an SSN–23 at the end of the day.

Senator ROBB. I guess my time is up. Madame Secretary, just a time in terms of competition is all I would ask. When do you allow the competition to begin?

Ms. SLATKIN. There would be a set of conditions that would be important to me as the Navy's Acquisition Executive and I would hope you would share; first and foremost that the design be complete and that we understand that we have a design that the Government takes responsibility for, and not any sooner, so that we do not run into some of the risks of some of our previous submarine programs; and second of all, when we are at a steady production rate.

Senator ROBB. Mr. Chairman, my time has expired. I will wait until the next round.

Senator COHEN. I am going to recognize Senator Kennedy, Senator Smith, first and then I will rotate over to you. Senator Kennedy?

Senator KENNEDY. Thank you.

Secretary Slatkin, I was not here at the outset of the hearing, but I wanted to join others to congratulate you on your nomination. It is an expression of confidence by a very distinguished public servant, John Deutch, and it is an area of great need.

And I just want to express congratulations to you for the work that you have been doing in the Department of Defense and that you will do.

And thank you for an excellent presentation from our panelists today.

I think there is a ring to the concept of competition, and I think in trying to understand where we are. I think Secretary Slatkin was trying to position us to understand how we got to where we are so that we were going to have the opportunities of competition down the road so that there can be the effects of competition and the savings, for example, of major weapon systems.

We do not effectively have the competition on an F–16 or an F–18 or B–2 bomber. That was done in a different way. They were made by a single company. What the judgment was was to try, as I understand it, to get the design, then permit competition.

And the judgment is made on the basis of financial review that this, over a period of time, will be less costly in terms of the taxpayer and was also important in terms of our national security.

I think the argument, quite frankly, that the dangers in terms of the long range about a disaster or some kind of strike at one of these manufacturing centers stretches it a bit.

If we are going to have a blowing up of Newport News or E.B., we are going to have a major kind of a problem that is probably going to take some time to beget some reactions that are not directly related to the lead time in terms of the production of submarines. But that is another issue at another time.

I think the important factor is the issues of competition and where the savings should go. And I, for one, have been listening to our good friends from Virginia. The fact remains that on the CVN–76, as I understand it, it is 22-percent profit at an award of $457 million.

That is on a basis of a sole source. They could give you the submarine. They could give you the submarine under even the language that has been proposed in their very—as advertisement.

We would not really have the competition or know where we are going to be over a long period of time.

And it just because of those kinds of considerations that you have to ask yourselves where we are going to be in terms of competition.

But let me ask you: On that issue about the—if you do go ahead, how can you give the assurance, or can you give assurance—and I am sure that no one at Newport News is concerned that if they are not allowed to compete for the first nuclear attack submarine, that they will never be in a position to build submarines again.

So is it reasonable to expect that the Navy could begin competing submarine construction at an unspecified date in the future, if the only nuclear power vessels that Newport News is building are the aircraft carriers? They make that. It is made during the course of the hearing. And I want your answer to that.

Ms. SLATKIN. Senator, we believe, based on our information, that 85 percent of the required skills can be carried over to submarine work.

Senator KENNEDY. I heard that. But, I mean, what is the—besides the various skills, how do you respond to—under the Navy's plan, what would be the circumstances to permit bringing Newport News back into the submarine construction?

Admiral DEMARS. If I might answer that, Senator. You would obviously have to allow them to become familiar with the design of the new submarine. You could not expect them to be able to compete or accept the award of a submarine without knowing what they were doing.

So the Navy would have to spend some finite amount of money, and it would not be a lot, maybe $20 million, to allow them to familiarize themselves with the design.

We have done that before in other segments of shipbuilding, and they would assign a number of engineers to come through the design to see where their processes differed and to get ready to build the submarine and/or compete on it. That is a fairly straightforward thing that the Navy would exercise in the future.

We would have then a stable design, and that is a big difference.

Senator KENNEDY. And that is a process that has been worked through other——

Admiral DEMARS. Yes, sir.

Senator KENNEDY. Shipbuilding competitive situations.

Ms. SLATKIN. Yes, sir.

Senator KENNEDY. Let me ask you, Secretary Slatkin, you claim that there will be continued leverage to keep the costs down at Electric Boat, even when Newport News will not be building submarines. Could you explain this reasoning further? I mean——

Ms. SLATKIN. Yes, sir. I would be happy to.

Senator KENNEDY. Why is having the two sole source shipbuilders better than having one that is a producer of the nuclear power?

Ms. SLATKIN. I would be happy to, and let me give you two reasons. One, I think, is the threat of any potential competition will keep everybody at their leanest as a first order.

Second, we have had, as several of you have talked about, very successful sole source awards in many of our shipbuilding areas. I would point to the carrier as being an area where we have had successful sole source awards, where we have been able to control costs.

Sole source acquisitions are not unheard of. When we do use sole source as our instrument, we have very deliberate techniques to use—and it is not just the Navy; it is Defense Contract Audit Agency—and ensure that costs are appropriate.

But the key here really is, Senator, the threat of future competition. That will keep everybody prepared and as lean as possible and giving the taxpayer the best benefit for the dollar.

Senator KENNEDY. Well, I mentioned just the profit that is made on the CVN–76, which is basically a sole source, 22-percent profit.

Is this typical of other shipbuilding contracts, such as the Aegis destroyers where there is competition between the yards?

Ms. SLATKIN. It is interesting. When you look at profit on a contract, you have to take in a number of judgments. One of the judgments that you take aboard, or take into consideration is the amount of investment a company makes to make the product more affordable.

If you look at the contract we negotiated on CVN–76, you will see that Newport News will get the profit levels that you mentioned, Senator, if they put a lot of investment up front to make the carrier more affordable.

It is high in terms of other shipbuilding programs. The Aegis program is much lower in terms of the profit, lower for both of the builders. The submarines are lower as well.

Senator KENNEDY. Could I just finally, because my time is expiring, Mr. Chairman, there has been advertisements in the newspapers with regards to language that might be suggested.

I do not know whether you have had a chance to review that language that has been circulated that provides and quotes—and I do not want to bother reading it, if you are familiar with it—"Include in authorization language provisions that mandate full and open competition for New Attack Submarines, direct the Navy, take no action to predetermine the outcome of the competition, require the Navy to award the procurement based on the competitive bids that are submitted by the contractors, not as amended by internal discretionary Navy evaluation, because two large, financially sound businesses are involved. "Let fair open competition, based on bids as submitted, determine the price required, design participation by Newport News in the New Attack Submarine to ensure fair and open competition."

Senator COHEN. I thought you were not going to read that.

Senator KENNEDY. If the—well, I did not. [Laughter.]

Ms. SLATKIN. I have not seen it.

Senator KENNEDY. She has not seen it. [Laughter.]

Senator KENNEDY. I was looking for—if that language is included, what flexibility does that give to the Navy? What in your view it would take to comply with the spirit of the language?

Ms. SLATKIN. Senator, I would like to look at it to give you a complete answer. But let me, in terms of listening to you, tell you what my concerns are.

As we have said here, introducing competition on the lead submarine will delay delivery of the New Attack Submarine by 2 or 3 years.

That is largely because we would have to stop what we were doing now in the design process to build an affordable design, and open up the process so that everyone could participate and the Government can take responsibility of the design. That is time delay, and that is risk.

Those are my principal concerns with any proposal, that would initiate competition on the lead submarine.

Senator KENNEDY. Well, I thank you. If you would give me the reaction to looking at the language, it is my understanding that if that language was included, it would effectively preclude the Navy from any flexibility of making the judgment, other than just the bottom line low bidder. But I would like, if you would——

Ms. SLATKIN. I will turn a response around very quickly.

[The information follows:]

DEPARTMENT OF THE NAVY,
OFFICE OF THE ASSISTANT SECRETARY,
(RESEARCH, DEVELOPMENT AND ACQUISITION),
Washington, DC, May 24, 1995.

Hon. EDWARD M. KENNEDY,
Ranking Minority Member,
Subcommittee on Seapower,
Committee on Armed Services,
U.S. Senate,
Washington, DC.

DEAR SENATOR KENNEDY: During the May 16, 1995, hearing on the Navy's submarine acquisition plan before the Senate Armed Services Committee Seapower Subcommittee, you requested the Navy's comments concerning proposed language that would require competition for the New Attack Submarine.

As noted in the enclosed paper, the Navy supports competition for the New Attack Submarine at a point in time when competition becomes advantageous to the Government—when the design is mature and the construction rate is high enough to support healthy competition. Mandating competition earlier may result in the loss of a nuclear capable shipbuilder, thus precluding the option of competition in the future and undermining the cost savings potential of the innovative New attack Submarine design/build process.

A similar letter has been sent to Senator Cohen. If I can be of any further assistance,please let me know.

Sincerely,

W.C. BOWES,
Vice Admiral, U.S. Navy,
Principal Deputy.

Enclosure.

NAVY COMMENTS ON PROPOSED LANGUAGE DIRECTING COMPETITION FOR THE NEW ATTACK SUBMARINE

The Navy supports full and open competition for the New Attack Submarine at a point in time when competition becomes advantageous to the Government. Competition would make sense once the design is mature and build rate is high enough to support healthy competition. Competing earlier may result in the loss of a nuclear capable shipbuilder, thus precluding the option of direct competition in the future. Any competition would be in accordance with the provisions of the Federal Acquisition Regulations.

Newport News has proposed an alternative plan—competition for constructing the lead New Attack Submarine—and claims there would be substantial cost savings for consolidating all nuclear shipbuilding to one yard. In response, the Navy recently completed a study on this issue that concludes shifting the lead New Attack Submarine construction to Newport News would realize no significant savings, and would jeopardize the Navy's ability to efficiently manage nuclear warship design and construction. Specifically:

— The cost premium for maintaining two nuclear capable shipbuilders per the Navy's plan is relatively small—about 3 percent of the cost of the Navy's total construction workload over the next 18 years.

— Newport News does not factor in the Groton shipbuilder's overhead reductions and efficiency improvements, and therefore greatly overstates the cost differential between the two yards. Newport News underestimates the cost for Groton to shutdown and for Newport News to re-start submarine construction.

— If the Groton shipbuilder shuts down, the Navy would lose invaluable leverage and the hedge against uncertainty that comes with having two nuclear capable shipbuilders. Having the option of a second yard provides continuing leverage to keep costs down even without early direct competition and preserves the option of competition in the future once the submarine build rate is high enough to support building at two yards.

The Navy is 2 years into a design/build effort for the New Attack Submarine at the Groton shipbuilder. This process is being used in all phases of the New attack Submarine design to optimize the New Attack Submarine for modular construction and to reduce or eliminate traditional cost drivers.

The design/build process developed at the Groton shipbuilder results in a more affordable submarine. Specifically, the design/build process reduces product cycle time, allows more meaningful performance - vs - cost trade-offs, minimizes change and rework, and results in a more producible design.

Senator KENNEDY. Thank you.

Ms. SLATKIN. Thank you.

Senator COHEN. Actually before this evening. [Laughter.]

Ms. SLATKIN. I will do my best, Mr. Chairman.

Senator COHEN. Senator Smith.

Senator SMITH. Thank you, Mr. Chairman.

I apologize to the witnesses for being late. I was managing a bill on the floor.

Madame Secretary, congratulations to you.

Ms. SLATKIN. Thank you, Senator.

Senator SMITH. I am sure others have already done that and good luck. I am not sure which job is more difficult, but I think you can probably guess which one it is.

The administration has really gone to great lengths to preserve the industrial base for submarine construction, about $1.5 billion for the *Seawolf*.

Could you elaborate a little bit on what we are doing in the area of ASW investments? This is of particular concern to me, if you could specifically talk about the advanced sensor technology, the P–3, and any other ASW initiatives that are on call.

Ms. SLATKIN. Could I ask Admiral Lopez to start, and then I will fill in?

Senator SMITH. Certainly.

Admiral LOPEZ. Sir, as you know, the submarine is our best ASW platform, but we are looking across a spectrum at our combatant ships and our aircraft, the VP aircraft which you mentioned, the AIP program. We have a number of programs. They are nothing as large as the building of a submarine.

The counter torpedo programs, counter detection programs. What I would like to do, if I may, come back to you with a complete briefing on where we are putting our money across the spectrum of ASW.

Senator SMITH. All right. Admiral, let me just pick up with you on another point regarding submarines. If you had to make a choice, you were forced to do it, either/or, would you prefer the one *Seawolf* or six 688 class submarines?

Admiral LOPEZ. Given the guidance that I have under the Bottom-Up Review, I would have to go with the *Seawolf* submarine. There are two reasons: One is that eventually I have to have a submarine that can deal with the future, and the 688s are not going to do that after the 2010 time frame. You have to replace them eventually.

For affordability reasons and for the reasons of what the Department of Defense saw as the threat, they brought us down to the 45 to 55 level in the Bottom-Up Review, and that is the direction we are going to by the end of this century.

So I am quite comfortable with building the SSN–23 as the newest and most modern ship. It is a good business decision, as well as a good warfighting decision.

Senator SMITH. Is it more a industrial-based decision, preservation of industrial base, or a military requirement?

Admiral LOPEZ. I do not think it is either/or. Quite candidly I think it is both. I think Ms. Slatkin and Admiral DeMars are better at addressing the industrial decision, but from a warfighting requirement, as the Joint Chiefs have studied and did their analyses and looked at the potential Russian threat and the potential capability of the Russians, we need 10 to 12 stealthy submarines, and that would be one of them.

Senator SMITH. Does the Bottom-Up Review, 45 to 55 submarine status, does that meet your forward presence requirements, force requirements, for submarines?

Admiral LOPEZ. We are going to have to make adjustments in what we do today. We use an average of about 60 to 65 submarines on our forward presence today. We have made adjustments, for instance, in our combatants. When I was commanding the 6th Fleet, I had 10 destroyers with every carrier. Now we have six.

So we will have to make some adjustments. We will not be able to do quite the same forward presence as we do today with 55.

Senator SMITH. Admiral DeMars, the Navy, from the Secretary on down, CNO, yourself and many other naval officers, were very forceful in indicating that they felt that the Portsmouth Naval Shipyard should be retained.

As you know, it was placed on the list by the commissioners. Do you have any reaction to that, as to what you think might be the reason for that, other than some of the things that were stated, which were not all that believable?

Admiral DEMARS. I cannot plumb people's intentions too well in that area, except that I think in base closure, many things get drawn into the action.

But as I have said, I have a particular responsibility for naval nuclear power, and that extends to the defuelings, refuelings, the ultimate disposal of the vessels and the power plants.

I have lost considerable flexibility with the closure of Mare Island Naval Shipyard and Charleston Naval Shipyard. I do not disagree with those decisions, but I have lost considerable flexibility.

To close Portsmouth also would further reduce my flexibility. Could we create a capability somewhere else? Yes, but it takes more money, and it cannot be done overnight. So Portsmouth is very key to me.

It is difficult to predict the future. I think that thoughtful engineers and managers generally do not run themselves down to zero excess capability because bad things happen, particularly in this very complicated business we are in. So we have to keep some excess capability for that.

I am in a very difficult situation now with the State of Idaho, because I have sole dependence, with no excess capacity on where I send my spent fuel.

We are hopefully on the end of a long process to allow us to get back into reasonable business with the disposal of our spent fuel. But my program spent over $45 million just coming through that, that which we did not have money for and did not get extra money for.

So I strongly support keeping Portsmouth Naval Shipyard, because I do need that flexibility.

Senator SMITH. Mr. Chairman, I know my time has expired, but I have a quick follow-up.

The problem is, though, you say you might have to reduce another yard at some point in the future. The point is, is it not accurate to say that the possibility of getting another nuclear shipyard ever again anywhere is pretty remote, is it not?

Admiral DEMARS. Very, very slight because of the increased regulation and the increase bureaucracy since this program was started up over 45 years ago.

Senator COHEN. Thank you, Senator Smith.

It is not the custom of the committee or subcommittee to call upon members who are not members of the subcommittee to ask questions, but, Senator Dodd, you are here. You obviously have a strong interest in the subject matter.

And I have talked with Senator Warner, who has agreed to allow you to proceed ahead of him on a second round. If you care to ask any questions, you are free to do so.

Senator DODD. Thank you immensely for the offer. And I think just being able to listen to the discussion, I was fascinated by that question, last question, and the response. It may throw some light on the subject matter. So I am very happy just to listen along to the questions.

Senator COHEN. Senator Warner, do you want to ask——

Senator WARNER. Thank you, Mr. Chairman.

You have been very constructive through the many years that we have had dialogue on this subject. And I know that you want to do what is in the best interest of the country, and I have always found that to be your bottom line.

Mr. Chairman, you are anxious to go to that second panel——

Senator COHEN. I am.

Senator WARNER.—in which case I will limit myself then to just one question back to Admiral Lopez.

I was much impressed with your response that the key element in your decision-making chain is that period of time such that we do not delay bringing on the New Attack Submarine.

Yet in the GAO report to Senator McCain, dated May 15—and we will see that you get a copy, if you do not have it—on page four, it recites as follows, "Although current Navy plans call for NAS, the New Attack Submarine production to begin in 1998, delays in programs of this size are not uncommon.

"Exploring and defining the concept for the basic design of the ship took a year longer than planned and thus might affect the schedule for production. In addition, an internal Navy memorandum, in the fall of 1994, states that the Chief of Naval Operations was willing to delay production of the NAS to fund programs of higher priority, which might indicate the Navy's willingness to do so in the future."

Are you familiar with that memorandum?

Admiral LOPEZ. I am certainly not familiar with the CNO's decision that that mentions. I do not know anything about that, sir.

Senator WARNER. Well, that seems to me to indicate there is some flexibility, which would enable, I think, and accommodate Newport News to fully participate.

Secretary Slatkin, Newport News is not asking that the design be transferred. It asks for the ability to participate in that design procedure.

Now, what would be the cost that you would ascribe to such participation?

Ms. SLATKIN. Senator, I have had several meetings with CEO and with the President of Tenneco and the President Newport News. They have not raised that proposal with me directly. So I have no way to give you a clear response to your question.

I will, however, entertain any proposal and give you a very quick response on that proposal.

Senator WARNER. It sounds on its face to be a reasonable proposal, would you not say?

Ms. SLATKIN. I have not seen it, sir.

Senator WARNER. All right. Thank you.

Thank you, Mr. Chairman.

Senator COHEN. Well, let me conclude this panel, if I might, unless others have questions.

Senator LIEBERMAN. Just one more question.

Senator COHEN. Well, we have two more panels, which I would like to complete this morning, which looks less and less likely.

But Senator Lieberman and Senator Robb each would like to ask, I believe, one more question. [Laughter.]

Senator COHEN. Maybe that was one more round. The term in this case is appropriate, I think, "round."

Would you care to proceed with one more question?

Senator LIEBERMAN. Thank you, Mr. Chairman. That is very gracious of you.

Senator COHEN. That is one more question.

Senator LIEBERMAN. Yes. Very gracious. Thank you. [Laughter.]

Senator LIEBERMAN. We have 5-minute rounds here, as opposed to boxing.

Secretary Slatkin, let me just go back to a question that our distinguished and very gracious and fair and warm chairman asked earlier on, which is: What would be the effect on Electric Boat if the SSN–23 were not built?

And I just want to clarify. It sounded to me as if you said that the Navy has concluded that without either the SSN–23 or some basically propping up that the Navy would do by contracting, that Electric Boat would close.

Ms. SLATKIN. What I said was that without SSN–23 or some infusion of work to keep the shipyard workers going, there would be no way that we could get to the New Attack Submarine in terms of the submarine production skills.

Senator LIEBERMAN. Okay. So this is real consequential. Let me now go to the competition question, because the term has been used at lot here. In the first place, it seems to me that there is competition and there is fair competition.

And what the folks from Newport News are proposing is unfair competition in the sense that, as Senator Kennedy said, not only are they building on a 22-percent profit margin on the aircraft carriers, they are building on a course of government work they have now, the aircraft carriers, and the presumption—and I say this in the direction of my friend from New Hampshire—that they will receive overhaul work as well in the future and successfully—and perhaps even get into the LPDs.

So that with all of that, they say we can compete fairly but, in my opinion, unfairly with Electric Boat that does not have any other work at this point except for the attack submarines that they are working on.

Now that is unfair competition. That reminds me of when the American companies go abroad to compete with foreign companies, and we sent them over there on their own. And they are competing with the foreign companies plus the foreign companies' governments subsidizing their proposals.

Am I hearing the Newport News proposal correctly in terms of the predicates for competition?

Ms. SLATKIN. Sir, I agree with your assessment of the predicates for competition. Our assessment, after listening to the proposal from Newport News, was that not only did they have to sustain the carrier work beyond CVN–76 and the overhaul work, but that they have told me they need submarine work in that yard to keep it going in time to make a New Attack Submarine.

The only submarine that I can see would be to take it out of the public yards. We would have to take the overhaul work out of the public yards. I do not see how because we only have so much on the table, and we only have so many things to move.

Senator COHEN. Well, Secretary Slatkin, there is a problem with that, and the law requires the Navy, I believe, to put at least 60 percent of the overhaul in the public yards——

Ms. SLATKIN. Yes, sir.

Senator COHEN. As opposed to private yards.

Ms. SLATKIN. Yes, Mr. Chairman.

Senator LIEBERMAN. The Chairman is again absolutely right. But nonetheless, it seems to be a precondition of the savings that Newport News is claiming for this competition.

Ms. SLATKIN. Yes, sir.

Senator LIEBERMAN. Secretary Slatkin, am I right that the proposed plan now for the New Attack Submarine is 30 warships?

Ms. SLATKIN. Yes, sir.

Senator LIEBERMAN. And what we are talking about here in terms of sole sourcing to Electric Boat at this point is essentially the first two, is that correct?

Ms. SLATKIN. Senator, we have not yet specified what the future acquisition strategy will be for the entire production. What we have been talking about is how we start the program and make sure that we get a design that is stable.

Senator LIEBERMAN. But again, the Navy is not opposed to competition when the competition would be what I would consider fair.

Ms. SLATKIN. At the right time, yes.

Senator LIEBERMAN. At the right time.

Okay. I am going to stop there. Thank you.

Senator COHEN. I would just simply point that it seems to be a Democratic affliction to be able to stretch one question into five, but you do it very well.

Senator LIEBERMAN. But I learned from you, Mr. Chairman. [Laughter.]

I think this is a bipartisan affliction.

Senator COHEN. Well, let's see. Senator Robb, would you like to carry on the Democratic fashion?

Senator ROBB. I will do my very best, Mr. Chairman.

Madame Secretary, let me come back to this point with respect to the 2- to 3-year delay that you referred to.

Would you be a bit more precise in terms of why there would be a 2- or 3-year delay and then square that with the statement you just made with respect to competition and whether or not we have fair or unfair competition?

It seems to me that if you argue that whatever takes place requires that much time elapse or that there is no learning curve, whatever the case may be, except with that supplier, and then to come back and say we are going to still prevent competition from taking place in a different sense altogether and say you may now both start even in terms of competition somewhere down the road—there was this statement in an entirely different context, and the context is civil rights, about the inequity of someone who had been hobbled and shackled their entire life suddenly being placed next to an athlete that had trained and conditioned his or her whole life and saying, "You are now free to run in a fair competition."

And it clearly is unfair.

Well, now, you have said that there is a 2- to 3-year time frame, a delay, that might be built in under the circumstances. And——

Ms. SLATKIN. Let me explain.

Senator ROBB. Some explanation, please. I mean, I just cannot square that on.

Ms. SLATKIN. I would be happy to. We are talking about developing the design for a 30-ship class of submarines. My number one priority is to make sure that design is mature and stable and affordable. That has to be my number one priority.

That is what we have underway right now with Electric Boat, designing a submarine so that we get all the bugs out, so that we get the most affordable submarine.

Senator ROBB. But does that suggest that you have to go back to square one, that you cannot take advantage of anything you have learned in the 2 to 3 years?

Ms. SLATKIN. Senator, to the best of my knowledge and to the best knowledge of the engineers and the people who work for me, we would stop work where we are, and I am not overstating this.

We would stop work where we are and have to take control and responsibility of the design, because you have two competitors who would not want to share openly with one another.

I do not know how to build the design with two people who are competing with one another. They must open their books and "open their kimono", essentially, to work together and then compete. That is what we tried in A–12 and failed. We said, "Work together and then compete at the end of the day."

What we would like to do here, sir, is get a design that is mature and stable and get an affordable submarine for a 30-ship class. That is my number one priority. Then talk about how a fair competition, should we choose to do that in the future, be executed.

Senator ROBB. Should we chose to have competition in the future? Was that the import of your last statement?

Ms. SLATKIN. My number one priority is a stable design that is affordable and producible. That is my number one priority, to get that first. The second priority would be the acquisition strategy for the future.

Senator ROBB. Mr. Chairman, I just——

Senator COHEN. Senator, you have just—if Newport News puts, say, a dozen people up there just to oversee that design operation, does that fracture this concept that you have?

Ms. SLATKIN. Senator, as I said to you earlier, I would be happy to look at any proposal and make sure it makes sense and get you a response quickly.

If their request is 12 people to oversee the design operation, I would like to take a look at it, understand it, and then be happy to respond back very quickly.

Senator COHEN. Senator Chafee has arrived.

Senator Chafee, do you wish to make a statement? We are about to conclude this panel.

Senator CHAFEE. I have nothing.

Senator COHEN. We offered the same opportunity to Senator Dodd. He wisely and graciously decided not to—[Laughter.]

Senator CHAFEE. Well, such an illustrious example as that, let me just say briefly that I support the third *Seawolf*, and also I support going ahead with the New Attack Submarine.

Senator COHEN. Thank you very much, Senator Chafee.

See the difference between Republican and Democrat? [Laughter.]

My next novel I think I will entitle, "The Case of the Closed Kimono." [Laughter.]

That is the best expression I have heard in a long time, Secretary Slatkin, I will think about the implications. But in any event, let me see if I can summarize where we seem to be at this point in time, to use an old expression.

I gather that if Electric Boat has to stop now, cease all design and preparation work now on the third *Seawolf*, it would involve cost, delay and, in fact in your judgment and that of Admiral DeMars and the entire Navy establishment, it would jeopardize its ability to continue in business. Is that correct?

Ms. SLATKIN. Yes, sir.

Senator COHEN. So that it may not be in a position to compete with Newport News, should that competition come about.

Ms. SLATKIN. If they did not do the design work and they did not do the SSN–23, you are correct.

Senator COHEN. In your judgment, they would not be in a position to compete, and therefore there would be no competition between Electric Boat and Newport News at any future point in time.

Second, I gather by way of implication—and perhaps when Mr. Fricks testifies, he can clear this up for me. But the implication was that if Newport News does not get the submarine work on the new follow-on attack submarine, the Centurion, or whatever it will be called, the implication is that it might very well close. And hopefully, we can have some clarification of that.

Which brings me to the third point, that we have another option, and that is that one yard can do it all. That, I think, has been acknowledged by everyone at the table here this morning.

One yard could in fact do it all, but there would be delays, costs and delays as much as 2 to 3 years. And we would end up putting basically all of our nuclear eggs in one Virginia basket.

Now the question is, it seems to me, that we have yet to resolve is do we want two yards? Do we need two yards? Can we afford two yards? And should we overrule the Defense Department's judgment that we need two yards?

Those question still are yet to be resolved. Your testimony has been helpful in at least framing the issues.

I have a number of questions that I will submit to you for the record and ask that you look at them very quickly before you move out to Langley. Hopefully you can answer those expeditiously. I will look forward to your continued cooperation in the Department, and now move to our second and hopefully third panels this morning.

Senator COHEN. Thank you very much.

Ms. SLATKIN. Thank you very much.

Admiral DEMARS. Mr. Chairman?

Senator COHEN. Yes.

Admiral DEMARS. Could we note in the record that I agree with Mrs. Slatkin?

Senator COHEN. The record is so noted.

We will proceed with the second panel. And we are pleased to have Mr. Turner of Electric Boat and then Mr. Fricks of Newport News to address us this morning.

Before turning to you, Mr. Turner, to give your remarks, I am going to yield to Senator Chafee, who would like to make a statement.

Senator CHAFEE. Mr. Chairman, I have a statement here that I would like very much to put in the record, if that would be agreeable.

Senator COHEN. It will be included in full.

Senator CHAFEE. Thank you very much.

Senator COHEN. All right.

[The prepared statement of Senator Chafee follows:]

PREPARED STATEMENT BY SENATOR JOHN H. CHAFEE

I would like to thank Senator Cohen for allowing me to join his subcommittee hearing today. As a Rhode Islander and a former Secretary of the Navy, I certainly have an interest in our Nation's submarine program, which has gone through some major changes in recent years and will continue to do so.

I also want to salute Admirals DeMars and Lopez, as well as Assistant Secretary Slatkin, in presenting the Navy's views on the *Seawolf* and New Attack Submarine programs. Our shipbuilding and submarine construction budgets have declined dramatically in recent years, and the Navy has done well in effectively managing these difficult changes. Today's hearing illustrates the serious challenges facing the Navy in the future.

I believe the administration has made a very convincing case in support of its request in the fiscal year 1996 defense budget for a third and final *Seawolf* submarine. I realize that today's tight fiscal situation makes it difficult to support any project that costs $1.5 billion, but for several well-grounded reasons, completion of the *Seawolf* program makes sense.

I encourage all Senators to carefully study the open intelligence reports on worldwide submarine proliferation. Not only the Russians, but many other potential adversaries such as Iran and China, are strengthening their undersea forces. Submarines have clearly outlived the Cold War, and the third *Seawolf* must be part of the U.S.' military posture during these changing, uncertain times.

We must also be mindful of the need to preserve the submarine industrial base, a fragile and unique national security asset. Even with completion of the third *Seawolf*, in just a few years this national asset will be cut to the bone as much as possible. Were Congress to make the mistake of halting the *Seawolf* program, the submarine industrial base would unavoidably be shut down. Reconstituting it—and there is much debate as to whether that would be possible—would take years and cost billions of scarce defense dollars.

I would also like to weigh in in support of the Navy's decision to maintain two nuclear capable shipyards over the long term. In this regard, Congress would be ill-advised to overrule the Navy and mandate that the new attack submarine program be competed.

While competition for Government contracts and in private sector business is of course a fine concept, it is the wrong answer for the New Attack Submarine (NAS) program. Today's Navy witnesses have argued persuasively that our long-term national security makes the 3 percent premium needed to maintain two nuclear shipbuilders a worthy investment. Competing NAS would ironically result in an end to competition as Electric Boat would be forced out of business, leaving the United States with only one nuclear capable shipyard. Preserving one submarine contractor and one aircraft carrier contractor will give our Nation the flexibility and security it needs to confront the national security challenges of the 21st century.

I would again like to thank Senator Cohen for allowing me to attend today's timely and useful hearing.

Senator COHEN. Mr. Turner?

STATEMENT OF JAMES E. TURNER, JR., PRESIDENT, ELECTRIC BOAT DIVISION, GENERAL DYNAMICS CORPORATION

Mr. TURNER. Thank you, Mr. Chairman, and good morning, members of the committee. I am Jim Turner, President of Electric Boat Division of General Dynamics.

Today I would like to speak on three topics. One, the present status of work at our shipyard; two, the great importance of authorizing construction of the SSN–23 this year; and three, the New Attack Submarine.

First of all, all the submarines under construction at Electric Boat are on or ahead of schedule. Our 33rd and last 688 submarine, U.S.S. *Columbia*, will be delivered this summer ahead of schedule.

We expect to deliver the final three Trident submarines ahead of schedule by about 10 weeks each and under target cost.

The SSN–21, the lead ship in the *Seawolf* class, is now more than 82 percent complete. I am confident that *Seawolf* will be delivered on time next spring.

The second *Seawolf* is over 40 percent complete and on schedule for June 1998 delivery. Aided by the initiatives developed by the Navy and Electric Boat, we will deliver these two ships within the congressional cost cap.

At the same time we have been beating the schedules on submarine construction, Electric Boat has re-engineered the company, a tough and painful process, so that we can build submarines that the Navy can afford.

Electric Boat does not rely on other work to be affordable. We focus on what we do better than anyone else, design and build quality submarines at the lowest price. Electric Boat is the low cost submarine builder.

Let me now turn to the SSN–23. First, the Navy has clearly established the military value and economic rationale for the third *Seawolf*. Second, failure to build the third *Seawolf* places the entire submarine industrial base at considerable risk.

The 7-year gap from the SSN–22 to the New Attack Submarine impacts the capability to build submarines without substantial reconstitution costs. That is, the future ability of the submarine industry to deliver submarines the Navy can afford is jeopardized.

Thus from the military, fiscal and industrial base considerations, construction of SSN–23 is in the nation's best interest, and I urge you to support its authorization.

The New Attack Submarine is my final topic. With the New Attack Submarine, Electric Boat is pioneering the use of the design/build approach.

At the core of this approach, we have 18 design/build teams with members drawn from our design, engineering, construction and logistics groups. They are joined by members of equipment suppliers and the Navy.

Clearly, to realize the benefits of the design/build approach, the lead ship must be built at the design yard. Otherwise, the substantial savings will be lost.

I am pleased to tell you that the design/build approach works. Our design/build teams are incorporating advance modularity, producibility in order to cut construction costs and providing for technology insertion to facilitate military improvements in the future.

The New Attack Submarine will feature *Seawolf* stealth in a smaller hull at about two-thirds the cost. Thus, submarine design/build is acquisition reform in action.

The major obstacle in the path of an affordable New Attack Submarine is the competition issue that has been raised at the eleventh hour by our competitor.

In considering the competition issue, let me review the chronology of events leading up to today's hearing. I believe that this will illustrate the vigorous selection process that has already taken place, a selection in which Electric Boat has been the consistent winner based on cost and technical merit.

1989, Electric Boat was the low bidder for the first *Seawolf* submarine. 1991, Electric Boat was the low bidder for the second *Seawolf* submarine. Newport News appealed, but the appellate court upheld the award.

Following concept studies by Newport News and E.B., the Navy selected Electric Boat to develop the next generation propulsion plant based on technical superiority in 1991.

In 1993, the DOD Bottom-Up Review decision was to maintain new nuclear shipbuilders, build carriers at Newport News and to build the SSN–23 and the first New Attack Submarine in Groton.

In 1994, the DOD acquisition decision memorandum directed action to initiate design construction of the lead ship at the Groton, Connecticut shipyard. I emphasize that the acquisition decision memorandum spoke to the lead ship, not the entire New Attack Submarine program.

1994, the Navy selected E.B. for the New Attack Submarine design/build and approved E.B. innovations, such as a reconfigurable torpedo room, and fly-by-wire ship control, and an integral special warfare system.

In 1994, the Navy awarded a sole source contract for the CVN–76 to Newport News. In March of 1995, Newport News challenged the decision to retain two nuclear shipbuilders and claimed a $2 billion savings on the first five New Attack Submarines.

Twelve days ago, the Navy responded to the Congress regarding the issues raised by Newport News, and they provided three basic conclusions.

One, the cost to maintain two nuclear capable shipbuilders is low, and the value of keeping two yards far outweighs the cost.

Two, shifting submarine production to Newport News would realize no significant savings. And three, competition at this time would be counterproductive and would increase costs.

Electric Boat is in complete agreement with these conclusions. Electric Boat has already won the competition for the design/build of the New Attack Submarine.

I contend that competition to construct follow ships should take place when the submarine production rate will support it, when it is advantageous to the government and the taxpayer, and not at the whim of another contractor.

To recompete the New Attack Submarine lead ship now would ignore the rigorous selection process that has already taken place and in the near term would add cost of competition that would counter your efforts to reduce the deficit.

In summary, the decisions that you will make regarding submarine procurement will impact the Navy and the submarine force for many years to come.

I am not overstating the case by telling you that a failure to fund the SSN–23 this year places a risk that the nuclear submarine industrial base that has been developed over four decades will be at great risk.

Industrial base alternatives to the SSN–23 have been debated for more than 3 years. Meanwhile, we have been completing submarines. Today the hull sections for the SSN–22 are nearly complete in our Quonset Point facility.

They represent the final submarine hull construction anywhere in the United States. By next March, Quonset Point facility will be empty.

Clearly, the time for debate is past. The Navy's fiscal year 1996 submarine modernization plan is before you, and it is a good plan.

The Navy plan calls for authorizing 23 this year and the New Attack Submarine in 1998. It provides the least cost, least risk path to design and construction of affordable submarines for the 21st century.

I urge you to support the submarine plan that the Navy has proposed. Thank you very much.

Senator COHEN. Thank you, Mr. Turner.

[The prepared statement of Mr. Turner follows:]

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SENATE ARMED SERVICES COMMITTEE
SEA POWER SUBCOMMITTEE

James E. Turner, Jr.
Corporate Executive Vice President
General Dynamics Corporation

President
Electric Boat Division

Testimony before
the U.S. Senate
Armed Services Committee
Sea Power Subcommittee

Washington, D.C.
May 16, 1995

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I. INTRODUCTION

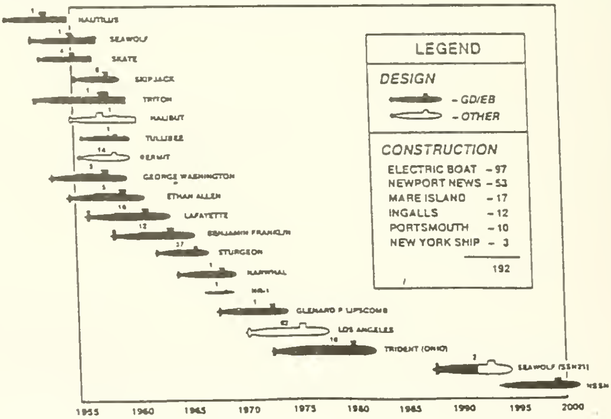
Mr. Chairman, and members of Congress.

I'm Jim Turner, Executive Vice-President of General Dynamics Corporation, and President of its Electric Boat Division.

I would like to thank you for this opportunity to present my perspective on the requirements for continued production of nuclear attack submarines.

As you know, the name "Electric Boat" is synonymous with submarine technology. Electric Boat designed and built the Navy's very first submarine, HOLLAND. Electric Boat designed and built the very first nuclear submarine, NAUTILUS. Electric Boat designed and built the very first strategic missile submarine, GEORGE WASHINGTON. As testament to our design expertise, of the 19 nuclear submarine classes developed in this era, Electric Boat designed 15. Of these 19 nuclear propulsion plants developed, Electric Boat designed 18. Electric Boat has designed the only nuclear power plants in the United States since 1970. Of all strategic missile submarines ever produced by this country, Electric Boat designed every single one. It should be no surprise, then, that the Navy's technical evaluation resulted in the selection of Electric Boat to design and build the New Attack Submarine. On the production side, the Navy has ordered a total of 192 nuclear submarines from 6 shipyards. Electric Boat was awarded more than half. Of the 62 LOS ANGELES (SSN688) Class submarines authorized since FY70, Electric Boat was awarded more than half. All other submarines authorized in the last 25 years — 18 TRIDENTs and 2 SEAWOLF Class — have been awarded to Electric Boat. It is no wonder that Groton, Connecticut — home to our submarine design and final assembly facilities — proclaims itself to be the "Submarine Capital of the World".

ELECTRIC BOAT IS THE WORLD'S PREMIER RESOURCE FOR NUCLEAR SUBMARINE DESIGN AND CONSTRUCTION TECHNOLOGY



Two years ago I testified before your colleagues on the Defense Subcommittee of the U.S. Senate Appropriations Committee. At that time, I stated that one action which would aid us in the defense industry would be for the government to project its basic defense requirements. A predictable business forecast would thus allow us, in industry, to plan our business strategy and adjust our resources and investment to meet market demands. I also indicated that over the longer term, what the nuclear submarine industrial base requires is a national investment strategy, a key element of which would be a new acquisition approach. The principal characteristic of this approach would be low-rate production of fully capable submarines that provide baseline capabilities, as well as the potential for modular, mission-specific reconfigurations. This strategy would maintain ship affordability, mission flexibility and undersea superiority.

Electric Boat is not here asking for a subsidy. We don't need that. We're successfully building down to the very low rate of submarine production ahead. We don't want a handout; what we are seeking is commitment to the OSD, Joint Chiefs of Staff and Department of the Navy plan that delivers the nation's undersea warfare requirements in the 21st century. And it is a commitment that is consistent with the DoD announced policy which was further committed to in the NSSN Acquisition Decision Memorandum. It is a commitment that is equally critical to retaining the national supplier base by assuring them a stable and predictable submarine market in the future.

Today, I note that the Defense Department and the Navy have provided this commitment. The submarine force level requirements have been identified — no, not an absolute number, but rather, a narrow range. What is important here is that it is not a wish list. The requirement is based on our national security needs. In turn, the Navy is implementing a new submarine acquisition approach. It is a plan which maintains the key elements of our submarine industrial base, and more importantly, industrial readiness. It is an affordable plan which provides technologically advanced submarines. And it is a prudent plan based on low-cost/low-risk transition to a new attack submarine.

So, the goal has been defined, and the strategy has been laid out. What remains, of course, is the implementation. I am not here to tell you what Electric Boat is going to do. We're way past the planning stage. I am here to tell you what Electric Boat is doing. I have taken the information that I asked for two years ago — the goal and the strategy — and established Electric Boat's direction. We are now well down the path of reengineering Electric Boat in a manner that will allow the men and women of Electric Boat to continue what Electric Boat does best: build the best submarines in the world for the U.S. Navy at the best value to the taxpayers of this country.

I use the word "continue" purposefully. I would point out to you that every submarine under construction at Electric Boat is either on or ahead of schedule. Every one. And, on March 18, Electric Boat moved the SEAWOLF (SSN21), the world's most capable submarine, onto her launch pontoon for the whole world to view. Not just an artist's rendition. A real submarine, over 82% complete. And close behind, her sister ship, CONNECTICUT (SSN22), now over 40% complete. I would also note here that both these ships were competitively awarded to Electric Boat because we are the low cost builder.

With regard to the Congressionally-mandated cost cap on the SEAWOLF program, Electric Boat is performing to its contractual agreements, and is confident in the scheduled May 1996 delivery of the first ship. Electric Boat is performing to or ahead of contract terms, with every submarine in our backlog. Every one. Even though we are in a near cataclysmic downsizing as we build out the last 688 and TRIDENT submarines. We are achieving these results, in no small measure, because of our reengineering the business. We have been reengineering for two years in order to build submarines affordably at the low production rates we now face. Our thrust has been to provide the United States with affordability through change in process and organization, not to ask for affordability through increased volume in numbers and types of ships. Reengineering now. And getting results now. Before I provide specific details of this, let me leave with you one more thought as to the significance of what's going on here.

When I introduced myself, I mentioned several of the many accomplishments that have resulted in Electric Boat being recognized as the world's premier resource for submarine design and construction technology. There is one other accomplishment that I intentionally reserved to discuss here, in order to put reengineering in its proper perspective.

It occurs to me that, since the advent of naval nuclear power, there have been many evolutionary advances — thousands — in how we design and build nuclear submarines. Laser welding. Sound-isolation mounts. Electronic design. These are but a few. But in all the years since NAUTILUS made her debut, there has been but one truly revolutionary change in how we design and build submarines — the modular design and construction process, pioneered by Electric Boat. It changed everything. We built new facilities around this process — the Automated Frame and Cylinder Manufacturing Facility at Quonset Point, and the Land Level Ship Construction Facility at Groton. By comparison, the old way of producing submarines was analogous to putting a watch together through its stem hole. I mention this revolutionary change now, because I believe we are on the verge of yet another revolutionary change in submarine design and construction.

A change that portends equal significance. A change that is already embedded in our reengineering. It's called Design/Build, or Integrated Product and Process Development, as designated by DoD. It's not a new term. It just has a new meaning. And it's not just a buzz-word or a slogan. It's a revolutionary process for producing affordable submarines, and it is only taking place because it is part of the Navy's strategy for continued production of nuclear attack submarines. From my perspective, without speaking for the Navy or the Department of Defense, the New Attack Submarine (NSSN) program is leading the nation in acquisition reform and integrated product design and development.

Design/Build has new meaning, because now it is more than just our engineers working in concert with the shipyard trades. The Design/Build concept is a team, a team that also includes our suppliers, and most importantly, includes the Navy. And it is a change in how we do business, a change that is affecting Electric Boat so much that, internally, we describe it as a culture change. The Design/Build process in place at Electric Boat has been validated "world class" by an independent Navy review team. I am confident that as you review the specifics of this concept, you will realize how integral Design/Build is to the notion of affordable submarine construction.

As I mentioned earlier, two years ago I identified the needs of industry: Tell us the submarine force level goal; Tell us the strategy for continued production of nuclear attack submarines. These requests have been satisfied. From my perspective, I have no new requirements to add. All I ask of you, the Congress, is: Stay the Course. You have a shipbuilder who is the low-cost supplier. A shipbuilder who is meeting his schedules. A shipbuilder who is financially performing to customer and shareholder requirements. And you also have a team. A team made up of the Navy, Electric Boat, and the submarine industrial base suppliers. This team is working together to deliver an affordable New Attack Submarine. This team is working together in a way that can only be reminiscent of the efforts to produce NAUTILUS and GEORGE WASHINGTON. Let this team fulfill its commitment to you. Stay the Course.

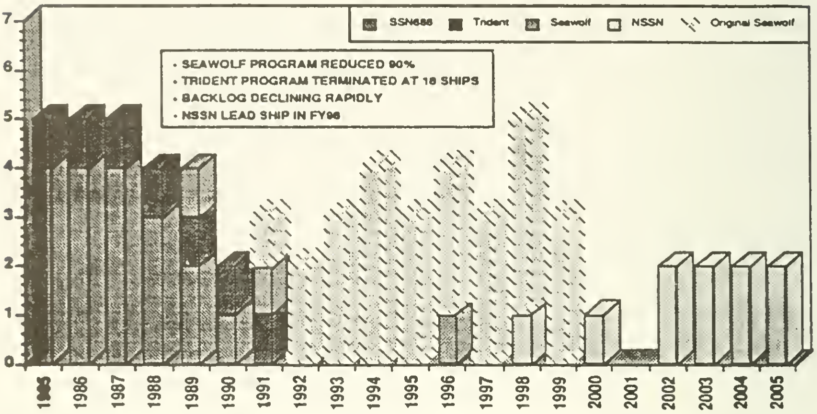
II. PERSPECTIVE

The United States nuclear submarine industrial base embodies fifty years of investment in advancing submarine technology — an investment in dollars, in labor, and in lives. The return on this investment has been the design and production of 192 nuclear submarines, with 9 still under construction.

The end of the Cold War and the subsequent break-up of the Soviet Union in 1991, made it clear that the defense industry, especially the nuclear submarine segment, needed to change dramatically.

The industry is well underway in transitioning from 40 years of Cold War production rates, to a new era of low rate production. The industry has already absorbed a 90% cut in production — from 4.5 ships per year in the '80s to less than half a ship per year in the '90s. The SEAWOLF program was reduced from 29 ships to 3 ships; the TRIDENT program was terminated at 18 ships from a one-time projection of 24.

THE DRAMATIC REDUCTION IN THE SEAWOLF PROGRAM INITIATED A PRECARIOUS TRANSITION PERIOD IN SUBMARINE PRODUCTION



The Navy has developed a plan which preserves essential submarine technology and production and supplier capabilities with acceptable risk at an affordable cost. Independent analysis has validated the plan's assumptions and conclusions. DoD and the Administration support the plan and have requested the funds to accomplish it.

The Navy plan is based on three key points: Low Rate Production of submarines has advantages over shutdown/reconstitution; Two nuclear capable shipyards should be preserved; and the New Attack Submarine (NSSN) must be affordable.

Electric Boat is actively engaged in implementing its portion of that plan: reengineering processes, facilities, and organizational culture so that it can provide an affordable submarine to the U.S. Navy.

III. ENSURING INDUSTRIAL READINESS: LOW RATE PRODUCTION VS. RECONSTITUTION

The long-range Navy submarine procurement plan embodied in near-term SSN23 construction and the NSSN Acquisition Strategy is based on a realistic, comprehensive assessment of future requirements, current capabilities, and cost-effective approaches. Explicit in this plan is the fact that alternatives involving shutdown and reconstitution of some or all segments of the submarine industrial base might well be impossible. Shutdown and reconstitution would be more costly, would involve significantly higher risk, and may fail to meet force level objectives for quiet submarines.

Over the past three years, 14 separate studies have examined the nuclear submarine industrial base. The consensus of these studies is that steady, low-rate production is the optimum and most cost-effective approach to sustaining the nation's capability to design and build nuclear submarines. Not a single study recommended the shutdown and reconstitution option.

The nuclear submarine is an exceptionally complex engineering and manufacturing undertaking representing an unusual combination of nuclear power, sophisticated electronics and cold steel. Applications of these seemingly incompatible partners must be made with strict requirements for safety and exceptional attention to detail in all areas of the design, construction, testing and operation of the nuclear submarine. Attendant with these strict requirements is the equally complex task of integrating all the component parts into a single product.

Construction and engineering personnel work very closely with one another and rely heavily on the experience and knowledge gained from each other to improve construction efficiency and technology. Critical manufacturing skills and specialized technologies such as modular sectional construction, material test and development, stealth and acoustic technologies are all utilized, improved and rigorously challenged in the nuclear submarine shipbuilding environment.

As ADM DeMars said in his report on the preservation of U.S. Nuclear Submarine Capability, *"Experienced ship and equipment designers cannot sustain their skills or generate useful products without the constraints of production line and waterfront reality. Paper designs always appear to work — the problems are in building and operating equipment."*

Barriers exist to reopening facilities tailored to submarine construction. Requalification of suppliers would be costly and time-consuming. DoD studies have found "long lead" times of up to 9 years between order and first delivery of nuclear materials. Environmental restrictions could impact processes or equipment which had ceased to be "grandfathered". Uncertainty of the future business outlook would discourage corporate retention of key facilities or re-investment in new facilities. Valuable waterfront property would most likely be converted to other uses.

Shutdown and reconstitution costs would undoubtedly exceed the proposed low rate production outlays. The RAND study indicates an aggregate shutdown/restart cost of at least $2.0 to $3.5 billion, not including the costs associated with increased programmatic risk, loss of contingent employment and revenues to state and local governments, and other social welfare costs. Further, RAND concedes that initial estimates are apt to underestimate actual returned costs by 50%–300% due to the uncertainty and risk involved. The current Navy submarine acquisition plan spends $1.5B on SSN23, for which you get a state-of-the-art submarine, and avoids the unbounded shutdown/reconstitution costs.

Start-up introduces unacceptable costs and risks into any submarine program. Startup of a nuclear shipbuilding program was difficult when the technology was in its infancy, and might well be impossible today. Consider the problems experienced at Ingalls and New York Shipbuilding when they were awarded SSN construction contracts in the '60s. Even the Quincy Division of General Dynamics, which drew on Electric Boat for expertise, experienced problems.

Recalling skilled personnel is apt to be ineffective, as top performers find secure jobs elsewhere. Rapid buildup with green labor results in skill mix dilution, impacting productivity and quality. Not least of all, the mindset of documented perfection — required for SUBSAFE, nuclear reliability and safety — would take years to regain.

Supplier Base

Nuclear submarine construction requires a multitude of different materials, technical skills and manufacturing processes. The sheer diversity of the requirements dictates that the supplier base be large and specialized. The submarine market never has been and never will be a "volume" business for that supplier base.

The supplier base consists of approximately 600 major equipment suppliers and approximately 3,000 firms when subtier and commodity suppliers are included. Some of these suppliers are small firms who are virtually totally dependent on submarine orders for their business. Others are large companies which devote only a fraction of their capacity to the design and manufacture of nuclear submarine components. These suppliers design and manufacture submarine equipment and components which range from nuclear propulsion equipment, to quiet pumps, valves, and motors, to submarine command, control and combat systems. Due to the special requirements of stealth, submarine safety and nuclear propulsion, most of the components made by the submarine supplier base are unique and unavailable elsewhere. The loss of critical suppliers could create serious disruption of submarine construction programs. It is important to appreciate that the technical skills involved in designing and manufacturing critical submarine components are possessed by a small population of people in a number of vital companies. Once lost, the skills of this relatively small number of designers, engineers and craftsmen would be very difficult to replace.

Because of the four year hiatus since the last authorization of a new construction contract and the continuing uncertainty regarding future submarine construction, many small suppliers who were heavily dependent on the submarine market have been forced to close their doors. Likewise, many large firms have concluded that they could no longer justify maintaining a presence in a niche market that required technical and production skills with only limited application in other (e.g., commercial) markets. As a result, the submarine industry is increasingly dependent on single and sole source suppliers.

To adjust to the erosion of the submarine supplier base, Electric Boat has conducted a detailed analysis and is working to maintain qualified suppliers in the areas of concern. Many suppliers have already completed their orders for both SSN21 and SSN22. Of particular concern are the non-nuclear suppliers who are relying on SSN23 for continued viability. Through a combination of advance procurement for SSN23 and advance engineering involvement on the NSSN, suppliers who are in the most precarious position and most critical to future submarine programs are being encouraged and sustained. As a result of these efforts, adequate suppliers remain to support the construction of SSN23 and the NSSN as presently scheduled. However, unless long term predictability is returned to the marketplace, it will be impossible to halt the exodus of more firms. And once the incumbents have exited, it will be difficult to attract new entrants given the investment required and the modest market projected.

IV. ENSURING INDUSTRIAL READINESS: TWO NUCLEAR CAPABLE SHIPYARDS

The Navy plan for submarine acquisition recognizes the significant advantages to the government and national defense in maintaining two shipyards capable of designing and building nuclear powered ships. Both the intangibles of risk and future uncertainty, and the very concrete elements of cost and current capability, have been factored into the Navy position.

This policy was most recently expanded upon by the ASN, RD&A Report on the Navy Submarine Acquisition Plan which concluded that the Navy's current plan will:

- "minimize submarine construction costs and risks over time;
- sustain the industrial base for submarines and nuclear components;
- preserve invaluable leverage that comes with having the option of competition; and
- enable transition to an affordable, capable, and flexible attack submarine fleet."

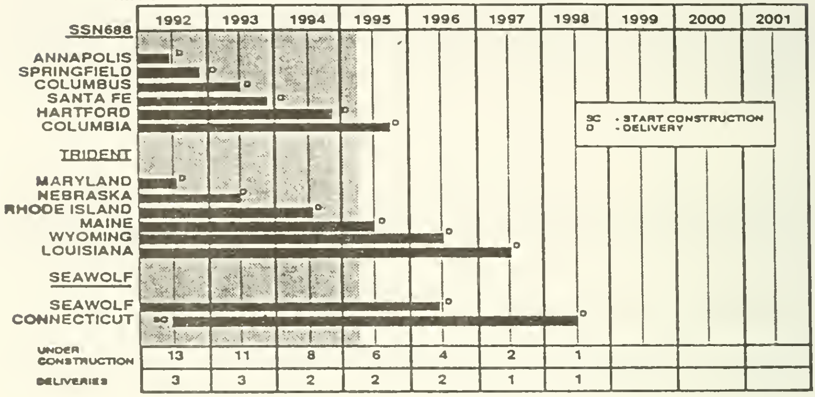
Assigning carrier production to Newport News and submarine production to Electric Boat keeps two nuclear capable designers and builders active. In the event of a natural disaster or economic work stoppage, the Navy can count on one nuclear shipyard remaining active.

Under the Navy's acquisition plan, the two nuclear capable shipyards will not be competing head-to-head for submarine construction contracts during the transition period of the NSSN program. However, the potential for competition, and the Navy ability to compare prices and rates on nuclear construction work, will continue to exert downward pressure on negotiated contracts at both shipyards. In addition, maintaining two nuclear capable shipyards supports industrial readiness goals, should changes in the future strategic environment demand higher production rates.

Implicit in the Navy decision to maintain two nuclear capable shipyards is that it is ultimately the most cost-effective and low-risk way to manage the technological development and production of future classes of nuclear powered vessels. Electric Boat fully supports that position, and the acquisition strategy which is consistent with it.

V. PROGRAM STATUS

CONSTRUCTION WORKLOAD HAS DRAMATICALLY DECLINED FROM 1992 WITH 13 SHIPS UNDER CONSTRUCTION TO ONLY 6 TODAY. BY YEAR END 1997, ONLY ONE SHIP WILL BE UNDER CONSTRUCTION

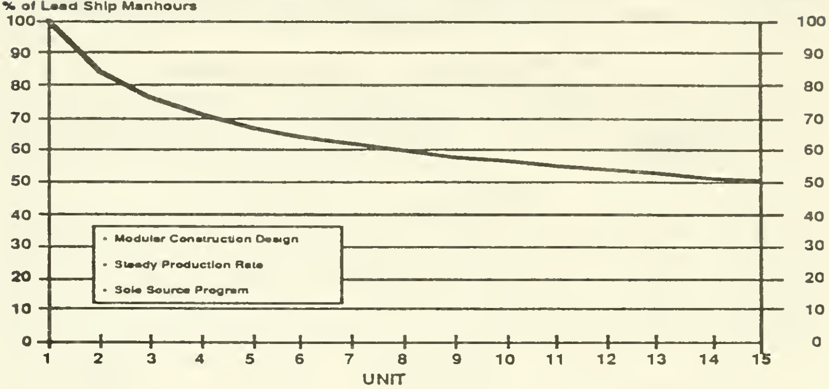


OHIO CLASS (TRIDENT) PROGRAM

Electric Boat has been the sole designer of strategic missile submarines (SSBNs) for the United States Navy, and is the designer and sole builder of the Navy's current SSBN program, the TRIDENT. As an integral part of the United States nuclear deterrent strategy, the TRIDENT's basic mission is to remain hidden at sea, equipped with nuclear-armed ballistic missiles, and thereby deter a strategic attack on the United States. As the sole surviving shipyard that has designed and built both SSBNs and SSNs, Electric Boat's contribution to the nation's ability to maintain a viable deterrent capability is unique and irreplaceable.

The United States Navy has awarded Electric Boat construction contracts for 18 TRIDENT Class submarines since the inception of the TRIDENT program in 1970. The TRIDENT construction program is scheduled to be completed upon delivery of LOUISIANA to the Navy in June 1997. As of today, Electric Boat has delivered 15 of the TRIDENT Class submarines to the Navy; all ahead of schedule. The next TRIDENT submarine , MAINE, is targeted to be delivered in June 1995.

A KEY MEASURE OF THE TRIDENT PROGRAM'S SUCCESS IS THAT THE 15TH SHIP WAS BUILT FOR 1/2 OF THE RECURRING LABOR HOURS REQUIRED TO BUILD THE 1ST SHIP — SIMILAR LEARNING IS BEING REALIZED BY THE SEAWOLF PROGRAM



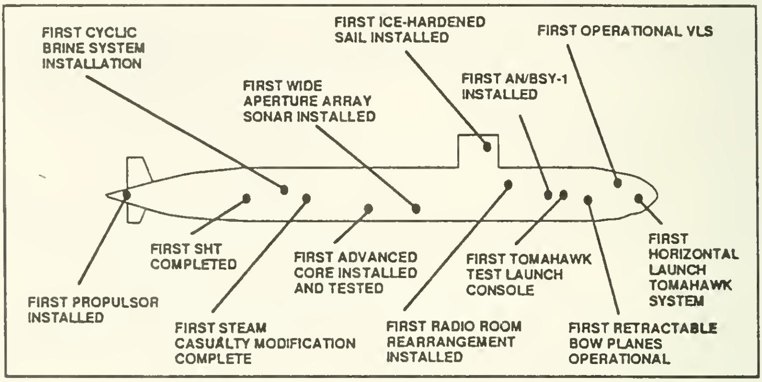
Throughout the TRIDENT program, Electric Boat has consistently achieved significant labor reductions per ship. During the course of the TRIDENT program, Electric Boat introduced automated hull cylinder fabrication, a manufacturing process which has revolutionized the construction of submarines. This process has permitted Electric Boat to adopt a modular construction technique whereby sections of the submarine hull are substantially outfitted with internal components at Electric Boat's Quonset Point, Rhode Island facility. The hull segments are then assembled at Electric Boat's land-level submarine construction facility in Groton, Connecticut. A key measure of the TRIDENT program's success is that the 15th ship was built for 1/2 of the recurring labor hours required to build the 1st ship.

LOS ANGELES (SSN688 CLASS) PROGRAM

Electric Boat is the principal manufacturer of attack submarines (SSNs), including the SSN688 Class fast attack submarine. In 1970, the United States Navy began procuring the SSN688 Class submarine, an attack submarine which is faster and better-armed than its predecessors. The final 31 ships of the SSN688 Class are equipped with a vertical launch system for carrying 12 Tomahawk cruise missiles in addition to the 25 weapons. Electric Boat was awarded construction contracts for 33 of the 62 SSN688 Class submarines procured by the Navy, despite the fact that Electric Boat was not the lead designer of the SSN688 Class.

As acknowledged by the aforementioned Navy Report on Submarine Acquisition, "Electric Boat is used to resolving systemic submarine fleet problems, improve existing capabilities, and handle the demanding first-of-a-kind technology insertion projects which require experienced engineering support. For example, Electric Boat designed and built the first Vertical Launch System for cruise missiles for SSN688 Class submarines. Electric Boat developed the installation design for the first Wide Aperture Array on SSN688 Class, the first propulsor, and completed the redesign for installing the first BSY-1 combat system on SSN688 Class."

SSN688 Class Program — Electric Boat "Firsts"


FIRST CYCLIC BRINE SYSTEM INSTALLATION
FIRST ICE-HARDENED SAIL INSTALLED
FIRST OPERATIONAL VLS
FIRST WIDE APERTURE ARRAY SONAR INSTALLED
FIRST AN/BSY-1 INSTALLED
FIRST SHT COMPLETED
FIRST ADVANCED CORE INSTALLED AND TESTED
FIRST TOMAHAWK TEST LAUNCH CONSOLE
FIRST HORIZONTAL LAUNCH TOMAHAWK SYSTEM
FIRST PROPULSOR INSTALLED
FIRST STEAM CASUALTY MODIFICATION COMPLETE
FIRST RADIO ROOM REARRANGEMENT INSTALLED
FIRST RETRACTABLE BOW PLANES OPERATIONAL

As of today, Electric Boat has delivered 32 of the SSN688 Class submarines in the Navy. Electric Boat will deliver its final SSN688 Class ship to the Navy in the third quarter of 1995.

During the course of the SSN688 Class construction, Electric Boat applied the modular design and construction techniques it developed during the TRIDENT program to the SSN688 program. As a result, Electric Boat was able to increase the degree of modularization of the ship's construction from approximately 10% to 50%, thereby achieving substantial efficiencies. For example, Electric Boat has reduced by up to 19 weeks the costly construction period between hull completion and delivery. It also has significantly reduced the wet dock construction period, which is the period from launch to delivery.

SEAWOLF (SSN21) CLASS PROGRAM

Electric Boat is currently building SSN21 (SEAWOLF) and SSN22 (CONNECTICUT), the lead and second ships of the SEAWOLF Program. Electric Boat was awarded the contracts to build these ships in direct competition with Newport News Shipbuilding.

In contrast to historical evidence which indicates program stability is a key characteristic of successful weapons systems, the SEAWOLF submarine program has been tumultuous. In 1990, as a result of the Major Warship Review, the program's production rate was cut in half. Subsequent reductions and rescissions in 1991 and

1992 further truncated the program to the three ships currently under construction or planned — a 90% reduction over a span of just three years. Despite the program's instability, Electric Boat's SEAWOLF construction program has been well run and continues to perform within the terms and conditions of the contracts.

SSN21 (SEAWOLF) is 82.2% complete. On Saturday, March 18, the ship was moved from our main assembly building onto the Land Level Construction Facility prelaunch position in preparation for Float-Off which occurred on April 27, this year. The ship will be christened on June 24, 1995 and is on track to delivery to the U. S. Navy on May 24, 1996.

The second SEAWOLF ship under construction at Electric Boat, SSN22 (CONNECTICUT) is over 40% complete. Electric Boat has realized a significant learning advantage by applying SSN21 experience to the second ship. The actual manhours required to complete an identical portion of work on SSN22 averages just 85% of the hours spent on SSN21. This performance improvement matches the learning curve of the TRIDENT program. This ship is also on track to its scheduled delivery in June 1998.

Electric Boat's objective for the SEAWOLF construction program is clear: Deliver the SSN21 and SSN22 in the most cost effective manner in support of the Congressionally mandated cost cap. Electric Boat will meet that requirement through continued progress in the integrated shipbuilder/Navy management approach which has recently been implemented at the direction of Assistant Secretary Slatkin.

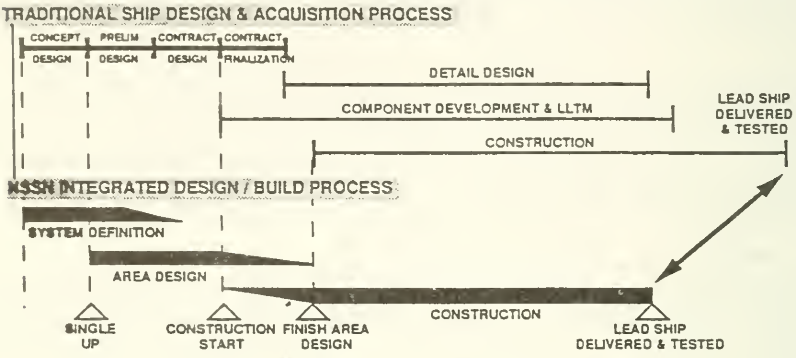
VI. NEW ATTACK SUBMARINE (NSSN) PROGRAM

It is clear that submarines will continue to play a vital role in the force of the future. It is equally clear that they must be acquired affordably because of the constraints of the Navy procurement budget. The objective, therefore, is to design and build the most cost-efficient platform fully capable of performing safely, effectively, and reliably in all projected operating environments. A secondary goal is to acquire such platforms at the right time and in the right numbers to meet force levels. The procurement plan put in place by the Navy represents a major step toward acquisition reform and is the best strategy to transition from the SEAWOLF to the more affordable NSSN.

The Navy has applied several key initiatives to NSSN acquisition, all designed to reduce cost and ensure affordability. These initiatives include both new ideas and application of "lessons learned" from previous successful programs.

Selection of a single Design/Build contractor for the lead NSSN is key to achieving the advantages of the Design/Build process, both from an acquisition streamlining standpoint and from a design development position. The NSSN acquisition approach and Design/Build process, as illustrated below, has enabled the Navy to shorten the overall acquisition cycle dramatically. It enables the Navy to make the most meaningful cost/capability/schedule tradeoffs, and to minimize the traditional liability associated with the Navy warranting the design to the builder. The acquisition strategy and contract structure envisioned places the Navy, the designer/builder, and the supplier base in partnership to produce the most affordable product.

DESIGN / BUILD PROCESS KEY TO DELIVERY AND AFFORDABILITY GOALS



The Design/Build partnership allows Electric Boat to capitalize on our unique manufacturing and production work practices and facilities. Further economies are being realized because the early single-up decision permits an integrated product and process development. This Design/Build approach focuses on the parallel development of products and their manufacturing process. This approach reduces product development time and cost by considering all elements of the product life cycle — from conception through disposal — including quality, cost, schedule, and user requirements. Realizing these benefits, many other companies have also started to use this approach as the basis of their future competitive strategies. It is significant to point out that in March of 1994, an independent Navy review team validated Electric Boat's Design/Build process, and favorably compared it to world leaders such as Boeing, Chrysler, and Northrop.

Design development has focused on "cost based platform" production. Use of existing components and systems design is being planned to minimize design and production cost. Commercial components and standardized parts will also be used, to a degree never before achieved, abetted by innovative approaches to configuration, arrangement, and deck structure. In addition, production costs will be minimized by concentrating outfitting and assembly in a factory environment rather than within the shipyard.

Current NSSN design development optimizes design modularity. In addition to applying modular construction efficiencies, it provides the operational benefit of reconfigurability for multi-mission requirements, and the capability for upgrades and insertion of new technology without the traditional barriers to change.

Development of the conceptual ship design and propulsion plant is proceeding rapidly at Electric Boat. Already, the advanced electronic design systems and methodology being developed and employed on the NSSN have created a product model for the design and construction of the ship. This is far beyond what would traditionally have been available at the conceptual stage, and enables development and validation of systems, components, and modules to proceed in accordance with an integrated schedule, well before construction of the ship begins. All participants — the Navy, Electric Boat, and the myriad of critical suppliers — are working together to the same targets for decision making, design, and production. This will significantly reduce the contract change activity which has traditionally challenged new designs.

VII. REENGINEERING THE BUSINESS

Electric Boat's management believes the changes to defense spending levels of the last several years are both structural and long-term. As such, these market changes demand significant and enduring changes to the way we have done business. Electric Boat has initiated major changes in the design, production, and processes to meet the dual challenge of affordability and very low rates of production.

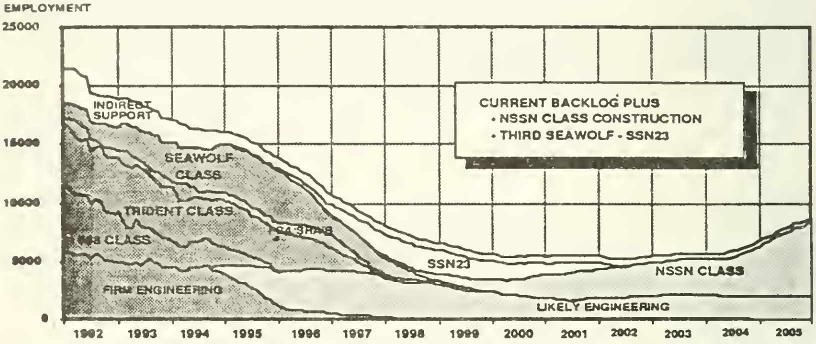
Electric Boat is presently in the midst of reducing submarine production from 3 ships per year during the early 1990's to a projected level of 1/2 ship per year through the remainder of the decade. The current production backlog runs out in 1997–1998, with completion of the last TRIDENT Class submarine and the second SEAWOLF, SSN22. Electric Boat employment, which exceeded 22,000 in 1992, has been reduced to approximately 15,250 through layoffs and attrition.

In 1989, in anticipation of a highly competitive SEAWOLF program, Electric Boat management began a concerted effort to reduce costs. These efforts, although successful, were still based on projected production levels of one or more submarines per year. With the abrupt truncation of the SEAWOLF program, it was apparent that a much more aggressive approach would have to be initiated if Electric Boat was to preserve the value in our backlog and position ourselves for future levels of low rate production. In response to this challenge, a Division-wide reengineering effort was initiated in mid-1993 to ensure the future viability of the business and the affordability of its submarines.

The first step in our reengineering process was to look beyond our backlog. Electric Boat evaluated a comprehensive set of options and strategies in order to develop a realistic business forecast. Recognizing the uncertainty and risk in this market, a thorough assessment of market opportunities was conducted covering submarine design and construction, overhaul and repair, and commercial business. As a result of this assessment, a decision was made to focus on continued submarine development and construction. Finally, a business forecast was developed: SSN23 award in FY96, NSSN design and construction in FY98, limited follow-on NSSN construction, and a conservative level of design and related support services.

This minimal, and protracted level of business has dramatically impacted our projection for business volume and mix. Given our forecast, we believe that Electric Boat employment will eventually drop to approximately 6,000 by 1998.

DRAMATIC VOLUME REDUCTION AND CHANGE TO WORKLOAD MIX REQUIRES A REENGINEERING OF PROCESSES AND ORGANIZATION TO REMAIN AFFORDABLE. RATIONALIZATION ALONE WON'T WORK



More importantly, however, this business forecast has also led to the development of Electric Boat's strategy for success in the new defense environment: Reengineering to maintain affordability. The implementation of this strategy has been underway for two years, and we are meeting our goals. Aggressive financial overhead targets have been established, based on a realistic assessment of projected business. Every process is being evaluated and reengineered, as appropriate, to drive out cost in order to meet plan targets. And, finally, improved management systems are being installed to closely monitor and control the plan.

The approach is to complement incremental cost reductions with step improvements in performance. These step improvements are derived from a fundamental redesign of cost structures and operating practices, not by scaling down current activities and infrastructure, but through a clean-sheet, minimalist redesign.

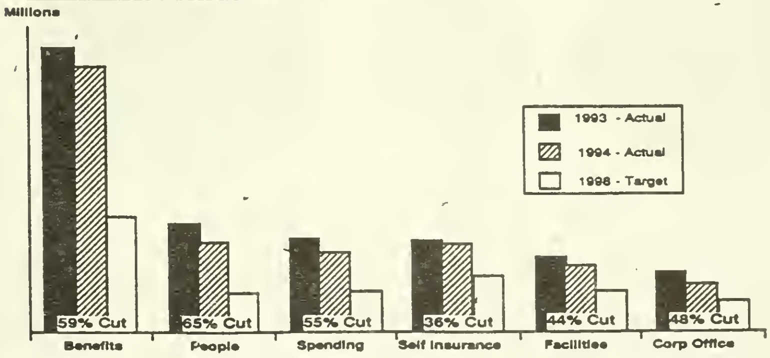
All of the Division's functional areas are being subjected to this process. At the outset, Electric Boat set aside traditional organizational structures and grouped functions into three broad areas: Innovation (Program and Product Development), Delivery (Manufacturing and Construction), and Strategy and Finance Systems (Finance, Information Management Systems, Human Resources, and Cost Control Management). This restructuring has immediately begun to break down traditional communication barriers and organizational silos, actions essential to successful reengineering. As the process evolved, cross-functional teams were also established.

Reengineering is having an effect now and will continue with NSSN. Reengineering efforts are focused on achieving affordability by reducing all costs. Indirect Costs, those general costs of doing business which are not directly related to a specific product, are being aggressively reduced across the company. Reductions in Direct Costs, the labor and material used to design and build the product, are being managed through a top down management assault, reengineering and productivity teams, and a careful monitoring of labor mix across all programs.

As the process evolved, additional teams were formed to pursue key cost reduction initiatives. For example, the "extended enterprise" team has taken Electric Boat's vision for affordability and productivity requirements to our suppliers. The facilities team is driving out the cost of facilities, within the framework of remaining a fully capable shipyard and preserving key capabilities at both Quonset Point and Groton. Productivity teams are also in place including Design/Build, Engineering Best Practices, Systems, and Management and Control. All aimed at driving out the cost of producing nuclear submarines.

As part of Electric Boat's reengineering, all overhead costs have been structured into six categories based on the management actions required to address them. These cost categories are: corporate allocations, footprint (facilities), general spending, self-insurance, benefits, and overhead people. Each of these categories was analyzed in detail, to determine fixed and variable cost, and aggressive financial targets have been set to meet 1998 low rate production goals.

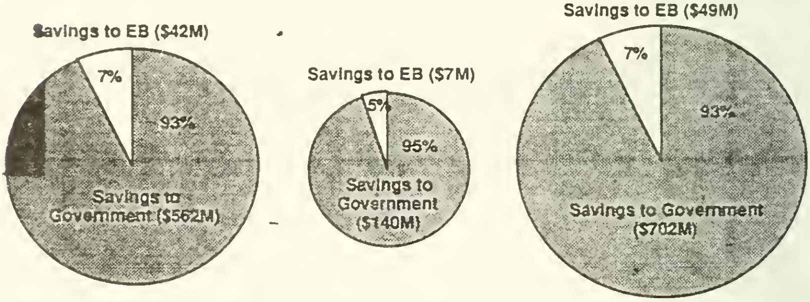
OVERHEAD COST CATEGORIES HAVE BEEN ANALYZED IN DETAIL AND COST REDUCTIONS ARE BEING MET. AGGRESSIVE FINANCIAL TARGETS HAVE BEEN SET TO MEET 1998 LOW RATE PRODUCTION GOALS



Levels of property, plant and equipment are being reduced. To date, Electric Boat has ceased operations at two major remote facilities. Both of these sites, along with a 200 acre waterfront property on the Thames River in Waterford, Connecticut have been sold. Excess equipment is being surplused as soon as possible; long standing lease agreements being reduced or terminated; older buildings are being razed; and, where feasible, access will be restricted in areas where future activity is low-use.

To date, Electric Boat's reengineering efforts have resulted in the elimination of over $600 million in overhead costs from the business plan from 1994–2001. Continuing these efforts, the Division fully expects to achieve its goal to cut an additional $150 million in cost over this period. These cost savings are being realized on work currently under contract and will reduce the cost of all future work as well. Additionally, it is most important to note, that approximately 95% of these savings will accrue to the Government, resulting in the delivery of more affordable ships.

AGGRESSIVE COST REDUCTIONS MEAN SIGNIFICANT
COST SAVINGS ARE BEING REALIZED ON CURRENT WORK
AND FUTURE PROJECTED WORK



Current Savings = $604M

Additional Projected Savings = $147M

Total Savings Projected Over 1994 - 2001 = $751M

Overall, Electric Boat's vision has remained firm, providing much needed stability and continuity amid rapid change. Some modifications to implementation have been made, some necessitated as a result of reengineering, others brought about by market changes.

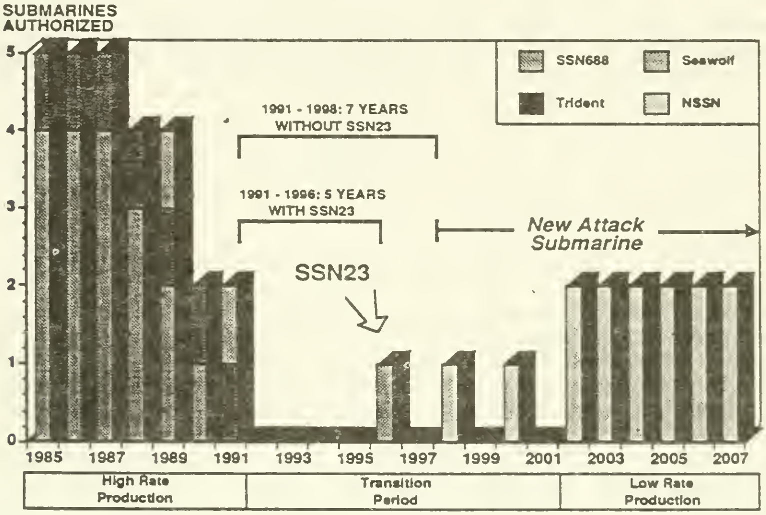
Our results clearly demonstrate Electric Boat's determination to meet the demands of the Navy and the Congress to provide quality submarines at an affordable price.

VIII. SSN23 COMPLETION

The last submarine authorized for construction was the SSN22 in 1991. If the lead NSSN is the next ship to be built, there would be a seven year gap in submarine production forcing the industry into a shutdown/reconstitution mode for nuclear submarine production.

Turning off this highly skilled, truly unique industrial base — and then trying to restart it later — imposes great costs and unacceptable risk. The supplier segment of the industrial base would not survive without the SSN23. Many suppliers of submarine-unique components would be forced to leave the business or to close their doors. The submarine industrial base cannot sustain a seven year gap, therefore a production "bridge" is required.

SSN 23 - FIRST SUBMARINE AUTHORIZED IN 5 YEARS



The logical alternatives for this bridge are an SSN688I or a third SEAWOLF. Reopening of the SSN688I production line would result in a total cost of approximately $1.5B for another SSN688I. SSN688I production costs could be even greater due to the shutdown/restart of the SSN688I production line and the possible unavailability of certain unique components. The third SEAWOLF would cost about the same due to the amount of funding already appropriated for material and components. Since a SEAWOLF, a far more capable platform than an SSN688I, could be procured for about the same price as an SSN688I, the third SEAWOLF is the most prudent choice for a production bridge.

Completing SSN23 enables Electric Boat to refine SEAWOLF "lessons learned" and further capitalize on construction learning efficiencies. In all the studies and discussions surrounding the issue of building the SSN23, it is easy to lose sight of our objective. Our objective — Electric Boat's and the Navy's — is a modern, capable nuclear submarine force for the 21st century. The means to achieve that objective is an innovative, active and technologically advanced submarine industrial base. Building the SSN23 ensures that the means will be there when we need it.

The SSN23 also represents a transitional link to ensuring affordability on Electric Boat's current construction backlog and future NSSN workload, thus avoiding large reconstitution costs. In testimony provided March 16, 1995 the Navy estimated the cost impact of not building SSN23 to be approximately $700M - $1B plus the potential for additional intangible costs in the hundreds of millions of dollars.

Subsequent statements by CNO Boorda have reaffirmed this and pointed out that, in addition to the $900M already committed to the ship, the cost of not building SSN23 would not save the $1.5B requested. Once termination costs and added overhead charges to current backlog and the NSSN are included, the costs of not building SSN23 would be $700 - $1.1B. The cost of refueling an SSN688 to meet force levels would further increase the costs of not building SSN23.

In addition to being the right decision from an industrial and cost perspective, completing SSN23 is the right decision for military capability. The Navy has stated that the SSN23 SEAWOLF will provide a needed warship, combat ready for any threat environment.

IX. NEW ATTACK SUBMARINE COMPETITION

Historically, the Navy needed at least two submarine construction sources in order to meet production requirements. Therefore, the Navy contracted with one of the builders as lead design yard to prepare a generic detailed design and/or procure components that were provided to the builders as Government Furnished Information/Government Furnished Equipment (GFI/GFE). Since all builders need to be treated equitably, the Navy would, via contractual clauses, warrant the timeliness and accuracy of the GFI/GFE to both builders. This in effect had the Navy warranting the designer's own data to his construction branch, a virtual invitation for claims against the government should problems develop during construction.

Consistent with the Navy's approach for GFI/GFE, the Navy was very careful that none of its actions would provide an advantage to one builder vis a vis the other builder. This resulted in minimal communication between the builders and the Navy during the several years of design activity that preceded the actual construction award. This prevented early identification of production problems, inhibited implementation of cost effective design changes, resulted in longer procurement schedules, and discouraged the structuring of contractual vehicles that provide incentives for significant cost savings.

The proposed NSSN integrated design/build contract is a significant departure from the traditional approach. The Navy consciously took the lessons learned on the SEAWOLF, as identified by the GAO, and developed an acquisition strategy which concentrated responsibility for design and lead ship construction in a single shipyard. Early selection of the lead design yard was, in fact, the competition for the program, and enabled implementation of the design/build acquisition strategy. This strategy reduces risk, affixes responsibility, and results in significant lead ship savings.

Design/build is more than just the submarine design and construction sides of the shipyard working together. The process encompasses the up-front participation of the principal suppliers and the Navy technical codes and program management functions in the detailed design development and cost/capability tradeoffs which are critical to NSSN affordability. In addition, because the design is tailored to the processes and capabilities of one yard, rather than being a generic product, numerous cost savings result which can be allowed for in the contractual terms and conditions, benefiting both the shipyard and the Navy.

Electric Boat has conducted an analysis of the impact of NSSN competition. This analysis had determined that for any competition scenario prior to the NSSN program reaching production rates which would support viable competition, the costs to "level the playing field", will increase the costs of submarines over the foreseeable future — no matter who wins the NSSN competition.

From a financial and risk management standpoint, competition should be conducted in the NSSN program when it provides the most advantage to the government, not when it is convenient for industry. The Integrated Product and Process Development environment currently in place on the New Attack Submarine program necessitates lead ship construction at the lead design yard. GAO lessons learned on the SEAWOLF program show this to be the lowest cost approach, and it is consistent with other shipbuilding and aircraft building programs. Once the design is validated in production, then competition should occur when production rates support introduction of a second builder. Premature competition will drive up costs unnecessarily and risk permanent loss of Electric Boat. Suggested action to mandate NSSN competition would in fact eliminate future competition. The two yard strategy is the only way to ensure competition over the long term.

The two nuclear yard strategy is sound as long as it is not cost prohibitive. The Navy has indicated that the cost to maintain two nuclear shipyards is relatively low, while the value of maintaining two yards is high. Furthermore, they have stated that a key benefit of the two yard strategy is "preserving the leading edge in submarine design by retaining the Groton shipbuilder — vital given our narrowing margin of U.S. undersea superiority."

Lastly, Electric Boat believes that the $2B cost saving claimed by Newport News for the first five NSSNs is not achievable.

Because the details of the Newport News claim are not yet available for analysis, the following estimate, presented to the National Security Subcommittee of the House Committee on Appropriations on April 5, 1995, is provided. Summarizing our analysis, there is about $500M of other overhead, a portion of which could be saved, but only a small fraction of the $2B savings as claimed.

This analysis is based on known NSSN programmatic values and several standard ratios which have been and continue to be applicable to nuclear submarine construction. Specifically:

- The total SCN projection for the first five NSSNs is estimated to be $11.1B, based on FYDP funding projections, a $1.5B USN target cost for the fifth ship, and appropriate learning curve assumptions for the five ships identified in Newport News' claim.

- The shipbuilder share of SCN cost is approximately 45%. The government expends 55% of the funds directed for Government Furnished Equipment (GFE) such as nuclear components, propulsion plant equipment, and combat systems, for Program Management and Supervisor of Shipbuilding activities, and for logistics and other services and materials. Currently, the shipbuilder's share of SSN21 is ~50% and SSN22 is ~41%.

- A reasonable profit rate on Navy ship construction is at least 10%. The SSNs currently under construction at Electric Boat and Newport News average 11.8% and 12.2% profit, respectively.

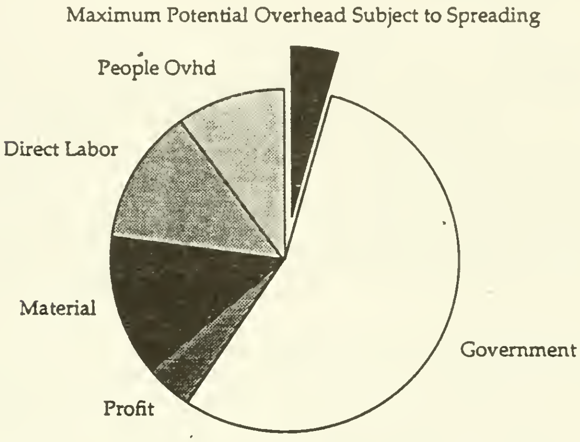
- Approximately one-third of the shipbuilder share of SCN goes directly to suppliers for construction material. SSN21 and the latest TRIDENTs are running ~36% material, while the last SSN688 is under 30%.

- Of the shipbuilder cost for direct labor and all overhead, approximately 45% goes to direct labor. Current attack submarine contracts are all in this range.

- Of total overhead, approximately 70% is people-related. In fact, Newport News has recently cited this ratio in their employee newspaper in discussing the need for benefit cost reductions. These costs, such as FICA, holiday and vacation pay, medical and dental benefits, etc., are assumed to be variable overhead costs associated with the labor to construct the ship, and would be incurred by Newport News with the construction work. Even this ratio overstates the potential savings, since it assumes that all of the fixed costs associated with submarine production at Electric Boat would be avoided by Newport News.

The net result of applying these admittedly approximate but clearly appropriate ratios to the question of potential savings from shared overhead results in maximum potential savings of ***less than $500 million*** — a long way from $2 billion — as shown below:

Total SCN for first five NSSNs	$11.1 B
Less Government share of SCN (55% of above)	($ 6.1 B)
Shipbuilder share of SCN	$ 5.0 B
Less reasonable profit (10% of above)	($ 0.5 B)
Total shipbuilder labor, material, and overhead	$ 4.5 B
Less Material costs (33% of above)	($ 1.5 B)
Total shipbuilder direct labor and overhead	$ 3.0 B
Less direct labor costs (45% of above)	($ 1.4 B)
Total overhead costs	$ 1.6 B
Less People related overhead (70% of above)	($ 1.1 B)
Maximum potential overhead subject to spreading (only a portion of which could be realizable savings)	$ 0.5 B



X. CONCLUSION

In summary I would like to stress four issues:

1. Electric Boat is committed to remaining the premier resource for nuclear submarine design and construction technology. Our Program Performance and Reengineering initiatives demonstrate our commitment to affordability and excellence.

2. The current Navy/DoD plan is the right course to follow. It ensures a viable nuclear submarine industrial base is preserved and an affordable and capable submarine is ready for future force level requirements. The FY96 funding request for SSN23 and NSSN is crucial to implementing this plan.

3. Mandating competition for the NSSN Program at this point would add cost to the program, and essentially negate the efficiencies of the Design/Build process which is well underway, as well as adding cost associated with maintaining involvement of two shipyards and the bidding process itself.

4. The funding decisions you make this year will be the most important ones you will ever make for the future of the nation's nuclear submarine programs, and perhaps the most important decisions ever made for the future of nuclear shipbuilding. Any divergence from the planned structure and funding requests will jeopardize the national ability to provide fully capable and affordable nuclear submarines.

Thank you for this opportunity to present my views.

Senator COHEN. Mr. Fricks, please.

STATEMENT OF WILLIAM FRICKS, PRESIDENT, NEWPORT NEWS SHIPBUILDING AND DRYDOCK

Mr. FRICKS. Thank you, Mr. Chairman and distinguished members of the subcommittee.

Good morning. My name is Bill Fricks. I am President of Newport News Shipbuilding. As you requested, I am pleased to provide you our views on the Navy's submarine programs. With your permission, I will submit my written statement for the record, and I will summarize.

Senator COHEN. It will be included in full.

Mr. FRICKS. Before I really get going, I would like to address a few statements that have already been made that I think are incorrect. First is that Newport News does not have to have the design work for the New Attack Submarine. That has been said.

We do not need it to be transferred to Newport News. We can use Electric Boat's design, just like they are using our design on the *Seawolf*. We just need a little coordination between the two. Our facilities are very similar. We can use their design. So I do not know where this comes from, but it is not true.

We see absolutely no reason for delay on the first ship. We are not going to start building the first ship for 3 years. To say that there would be a 2- or 3-year delay in the production just makes no sense whatsoever.

We have not said, Mr. Chairman, that the Navy is taking away repair work from Newport News, submarine repair work. We do not really have any.

We are doing small voyage repairs on submarines today, but we do not have any overhaul work, nor do we need any to compete on the New Attack Submarine.

It has been brought up—I do not know why, really, but it has been brought up about the profits on CVN–76. I think those numbers are incorrect or at least misleading.

We are looking at making about 15 percent on that contract. There may be some confusion in the way that the Navy reports their numbers. They show target fee and target cost.

The target cost is in base year dollars, which will grow dramatically over an 8-year period, which will dramatically reduce that percentage.

Mr. Chairman, the issue here is really quite simple. In all fairness, why is Newport News not being afforded the opportunity to compete the New Attack Submarine when we can save the taxpayers $5 million to $10 billion?

Let me talk about the cost side of this debate. Newport News is already the proven low-cost nuclear submarine producer. In competition with Electric Boat, we have won eight out of the last twelve submarines.

Yes, they received the last two, the two *Seawolf* contracts, and now those contracts are hundreds of millions of dollars above what Newport News bid. This has occurred even though the ships are being built during a time of high volume, and Electric Boat claims to have made dramatic re-engineering progress.

The Navy's plan for 2002 to build submarines at Electric Boat at the rate of half of a submarine per year will further result in skyrocketing overhead costs and labor and efficiencies.

In short, this program will be out of control. On the other hand, Newport News can consolidate all nuclear shipbuilding along with its other work and save the government $5 billion to $10 billion.

Now how can we do this? I have outlined in detail in my written testimony, and the answer is very straightforward. We began implementing a strategy to do this several years ago, and it includes three essential points.

First, Newport News has undergone the most dramatic re-engineering and organizational restructuring in the industry. We have reduced more overhead during the last 5 years than any shipyard in the world.

Second, investing in new technology and facilities. We are investing more money than any other yard to reduce our costs. We are moving beyond our leadership position in computer-aided design to computer-aided manufacturing and robotic process lanes.

And third, we are attracting new international sales to help spread the fixed costs of shipbuilding. In fact, Mr. Chairman, in 1994, last year, Newport News won America's first contract to build commercial ships for an international customer in more than 35 years.

Mr. Chairman, we have been very open and forthcoming with all requests for data for our savings. We first provided a very detailed report to the Navy and to Congress complete with overhead rates, labor rates, manhours, our assumptions, and all of our calculations.

The House Subcommittee then asked us and Electric Boat to provide data so that the CRS, who is here today, could make an independent study. We provided a great amount of proprietary data, highly unusual in American industry, and in the short time requested.

However, it is my understanding, as late as last week, that Electric Boat and the Navy had not complied with this request. Why not?

Instead, the Navy did their own report. It is essentially a biased advocacy statement in support of their own strategy.

It contains numerous incorrect, contradictory and unsupportable conclusions. But even after all this, they grudgingly admit to savings, which are over $2 billion in terms of outyear costs.

Now some of these unsupportable conclusions include that it would cost roughly $1 billion to shut down Electric Boat and restart Newport News. That is by fiscal year 1998. Half of that cost is assumed to be incurred at Newport News.

To put that in perspective, that is more than the shipbuilder's cost of a current 688 submarine. It simply does not pass the common sense test.

Now, after having said that it would cost $500 million to restart work at Newport News, the Navy makes the case that Newport News could compete after the year 2003.

It is totally inconsistent with the first point and, regrettably, we will be out of the submarine business by then. I would point out, Mr. Chairman, we will be out of the submarine business; we will not be out of business.

Senator COHEN. Well, I am glad you corrected that impression that I had because in response to one of the statement made, I drew the implication that if you were out of the submarine business, Newport News might very well decide to shut down.

Mr. FRICKS. I do not see that.

Senator COHEN. All right. Thank you.

Mr. FRICKS. The Navy further states that Newport News Shipbuilding savings are based primarily on obtaining commercial sales. Our data proves just the opposite, and I think the Navy has agreed to that.

The bulk of the savings comes from combining nuclear submarines and nuclear carrier construction into one yard.

I could go on and on, but I think you have gotten the picture. As Newport News has done, why would not the Navy simply provide the data requested by the CRS, so the Congress could have a clear, independent review?

Now I know in debates like this you hear a lot of testimony. I think ours has been simple. We can save the American taxpayer up to $10 billion. Just let us compete.

On the other hand, after listening to the Navy testimony and reading their report, let me try and summarize what it says. First, they say, Electric Boat needs the SSN–23 or their costs will go up by $600 million on the first two *Seawolf*s and exceed the congressional cost cap.

Second, they say, Electric Boat must have the New Attack Submarine or their overhead costs on the SSN–23 will go up and cannot be completed at the proposed $1.5 billion.

Third, they say, the New Attack Submarine needs the SSN–23 or Electric Boat's overhead and restart expenses will cause the New Attack Submarines cost to go up by $500 million.

And fourth, if you let Newport News compete on a ship that has not been designed yet, construction will not start for 3 years and it will cost an additional $1 billion.

And lastly, if you try and shut this process down, it would cost hundreds of millions in additional termination and environmental costs.

Now if you believe all this, you are stuck. You are on a merry-go-round, and Congress simply cannot get off. What I am telling you today is that you can get off, and you can control these defense costs simply by requiring competition.

The Navy's position is a major reversal of its past policy for the procurement of attack submarines. But more importantly, to our knowledge, it has been said they have never before denied a willing and qualified producer the right to compete and thereby put him out of that business.

Now the Navy has asserted that they need to maintain two separate nuclear capable shipyards. With all due respect, I simply disagree with the Navy. We do not need two separate shipyards. And to do so is going to cost you about $10 billion.

Let me address the need for two nuclear capable yards. First, everyone agrees that Newport News has the capacity to build at least four submarines a year, far in excess of anybody's projected build rate.

So there really is no need for two yards. Nor is there any significant benefit in keeping two yards.

Maintaining two nuclear shipyards does not give you flexibility. What you wind up with is inflexibility, a single supplier of carriers and a single supplier of submarines, neither yard will be able to produce the other's product at any reasonable time, in any reasonable cost.

The true measure of flexibility is the ability to switch work between submarines and carriers and back when the world situation dictates. That will be lost.

Second, it should be clearly understood that if Newport News is not allowed to compete for the New Attack Submarine, we will be permanently out of the submarine business, a business that we have been in proudly for 40 years.

In summary, Mr. Chairman, you have heard testimony from Newport News saying the savings could be $10 billion. You will hear different estimates.

You will hear questions about different assumptions, different calculations, conclusions. But the point, Mr. Chairman, is that everyone agrees we are talking about saving billions of dollars.

Where I come from, $1 billion is still a lot of money. Real money. And we can save it for the American taxpayer. We only ask the chance to compete.

Thank you.

Senator COHEN. Thank you very much, Mr. Fricks.

[The prepared statement of Mr. Fricks follows:]

PREPARED STATEMENT BY W. P. ("BILL") FRICKS, PRESIDENT, NEWPORT NEWS SHIPBUILDING

Mr. Chairman and distinguished Members of the subcommittee, good morning.

My name is Bill Fricks. I am President of Newport News Shipbuilding, a Tenneco Company. Newport News is a private sector company. As President of the Company, I have a profound responsibility to our shareholders and our employees to compete for contracts when we are fully qualified and capable of performing the work. We must not only compete—we must compete aggressively by seeking out every business opportunity and delivering the best ships at the lowest possible cost.

Today, most unfortunately, we have a major disagreement with our best customer, the U.S. Navy. We want to compete for the opportunity to build the New Attack Submarine. We have been told "Don't even apply." The Navy wants to sole-source this program to the Electric Boat Division of General Dynamics.

Clearly, this is a matter of great importance because it involves the future security of our Nation and the stewardship of billions of dollars of taxpayers' funds. Only Congress can resolve this dispute, and Congress must evaluate a number of factors in reaching its judgment. The excess capacity presently existing in the U.S. shipbuilding industry and the resultant higher costs per ship mandate that the industrial base must be rationalized. We have entered a new ere; the industrial base must change with it or the country will not be able to afford the ships it needs. I believe if the Navy continues with the outdated strategy of parcelling out work to maintain all the shipyards, the costs will be staggering. The Now Attack Submarine crystallizes this debate and offers Congress a rare opportunity to save billions of dollars by beginning this rationalization process. As this process takes place throughout the defense business some decisions will be very difficult. But in this case you have only to let the marketplace work. I firmly believe that Newport News Shipbuilding can save the country $10 billion over this 30-ship program. All we ask is that we be allowed to compete.

NNS CAN FULFILL ALL OF THE NAVY'S SUBMARINE REQUIREMENTS

Mr. Chairman, Newport News Shipbuilding was founded in 1886 and today is widely recognized as the most capable and flexible shipyard in the world. We have built over 700 naval and commercial vessels of all kinds.

More specifically, Newport News Shipbuilding considers itself to be the best submarine builder in the world—in terms of both cost and quality.

We have been building nuclear-powered submarines for almost 40 years. Today we are a builder of both nuclear-powered submarines and aircraft carriers.

We are the lead design yard for the *Los Angeles*-Class and *Seawolf*-Class attack submarines, and by the year 2000 every attack submarine in the U.S. Navy fleet will have be designed by Newport News. We have constructed 40 percent of today's attack submarine fleet. We also have extensive experience overhauling and refueling nuclear submarines.

During the 1980s Newport News Shipbuilding invested almost $300 million in designing and building facilities which can accommodate construction of the world's most advanced submarines. In these facilities we have perfected modular construction techniques at such fast rate of learning that we have reduced recurring manhours to build a submarine by approximately 40 percent. We have the capacity to build at least four submarines per year, which is far in excess of any projected build rate.

THERE IS NO COMPELLING NEED FOR MAINTAINING TWO NUCLEAR CONSTRUCTION YARDS

In a report to Secretary of Defense William Perry, dated February 13, 1995, the General Accounting Office stated:

> "Until DOD provides the rationale for its assertions concerning "loss of competition" and the need to protect the "long term defense industrial base and national security," the basis for its decision in the Bottom-Up Review to maintain two nuclear-capable shipyards is not dear."

In April GAO's Richard Davis also testified before the House National Security Committee that:

> "DOD has directed future nuclear submarine work to be done at the other nuclear-capable shipyard, virtually eliminating competition. It is not clear why DOD determined that two nuclear-capable shipyards are needed to protect the long-term defense industrial base and national security."

Our own view is that trying to maintain "two-nuclear capable-shipyards" is both counter productive and very expensive.

First, *the concept that having two nuclear shipyards gives the United States added flexibility is incorrect*. What will really exist after a short period of years is a single supplier of carriers and a single supplier of submarines, neither of which can produce the other's product in any reasonable time or at any reasonable cost. The true measure of flexibility is whether you can switch from submarines to carriers or back as the world situation dictates. In fact, keeping two nuclear yards will have exactly the opposite effect: creating great inflexibility and high costs as opposed to the flexibility and lower cost that comes from being able, within a single yard, to shift workers from carriers to submarines and vice versa. The reality, as the GAO rightly noted, is that no persuasive case has been made for sustaining two nuclear construction yards.

Second, it should be clearly understood that if Newport News is not allowed to compete fairly for the first flight of New Attack Submarines, we will effectively be eliminated *permanently* from the submarine business. There has been some talk of preserving Newport News as a "back-up" yard. This idea is illusory. Given that in normal production it taken 5 years to build these ships (then adding years to restart), it is misleading to talk of us being available as a "surge" option. War situations just won't accommodate 7 to 8 years for a shipyard to build back up.

Third, the last argument: that redundancy provides crisis protection "in the event of natural disaster"—not only focuses on a very unlikely hypothetical, but appears to assume that bricks and mortar constitute the core of nuclear capable shipyards. This is simply not true. The essence of nuclear shipbuilding is human resources. Without skilled and experienced engineers and craftsmen, nuclear submarines cannot be built. The physical plant of a shipyard ruined by a natural disaster can be repaired far more quickly than a skilled work force lost through attrition can be reconstituted.

In sum, the proposed designation of Electric Boat an the sole producer of nuclear submarines does not "preserve" the industrial base—it merely determines *where* that industrial base will be located. In view of the extensive private investment already made at both yards, competition, not unilateral administrative decision, should determine the physical location of the Nation's nuclear shipbuilding capacity.

CONSOLIDATING ALL NUCLEAR CONSTRUCTION AT NEWPORT NEWS SHIPBUILDING CAN SAVE THE NATION $5 – $10 BILLION

As we testified before the National Security and Appropriations Committees of the House of Representatives, we believe that the U.S. Government can save $2 billion just by building the first five New Attack Submarines at Newport News Shipbuilding. Furthermore, we have since submitted additional data, at the request of the House Subcommittee Chairman, Representative Duncan Hunter, to Mr. Ronald O'Rourke of the Congressional Research Service (CRS), who is testifying here today. That data showed that the cost savings to the Government, using very conservative assumptions, of consolidating nuclear submarine construction and nuclear aircraft carrier construction at Newport News would be at least $5 billion to $10+ billion between now and the completion of a 30-ship New Attack Submarine program. Mr. O'Rourke is working on his independent analysis of that data, and you will hear him here today. I would also like to point out that when I testified before that House subcommittee almost 2 months ago, Newport News, Electric Boat, and the Navy were requested to support the CRS so they could obtain an independent view of this debate. Newport News has supplied the data to the CRS on their schedule. It is my understanding that the other parties have not provided the requested data. Why not?

How is Newport News Shipbuilding able to provide up to $10 billion in savings? The answer is that several years ago we embarked on an aggressive business strategy to ensure our viability despite the severe cutbacks in naval ship purchases that was expected throughout the decade of the 1990s. This strategy includes three essential parts:

(1) Process re-engineering and organizational restructuring;
(2) High volume production; and
(3) Investment in new technology and facilities.

The strategy was designed to ensure that our ships would be affordable while retaining the quality for which we are renowned. While we recognized that this would be difficult given the expected low rates of production in both aircraft carriers and submarines throughout this period, we saw it as the only way to ensure a viable, vibrant company.

The first and foremost element of our strategy was to achieve the dramatic breakthroughs in process re-engineering and the changes in culture and organization that would ensure we were the low-cost producer in each of our product lines. We called this "operating cost leadership" and it has been the centerpiece of our business strategy since 1991. Since then we have reduced our labor force by over 10,000 and achieved (1) a 35 percent reduction in manpower (the highest proportion being indirect labor, or white collar support), (2) over a $250 million reduction in annual process costs by meticulously identifying and re-engineering processes; (3) over a 20 percent reduction in overhead expenses; and (4) a "flattened" organization that eliminated layers of management. We have consolidated plants and facilities, eliminating five off-site engineering offices, two remote plants and several shops within our

Newport News complex. We have also reduced our lease costs by more than 50 percent. We are continuing all of these efforts in our relentless drive to lower our operating costs.

Second, from the beginning we recognized that cost reductions and process re-engineering alone are not enough. The reality is that shipbuilding is a business where there are definite and very substantial economies of scale, and so we had to tackle head-on the issue of whether very low-rate production in any yard, even a totally re-engineered yard, would lead to truly affordable ships. The hard economic facts said no. You must have high volume in shipbuilding. Indeed, challenge any impartial observer to walk into any nuclear shipyard, view the size and complexity of that business, and then argue that business volume isn't crucial. This realization led to the second part of our strategy, which is to replace lost Navy volume by diversifying into new products and markets, a strategy which we embarked upon in earnest in 1992. Despite the chorus of nay-sayers, we have (1) just completed our 88th commercial ship repair job since 1992, (2) in the area of U.S. Navy surface combatants overhauled the destroyer U.S.S. *Hancock* and similar work on a sister ship, the U.S.S. *Thorn,* will be completed by August this year, and (3) successfully penetrated the international commercial market in 1994 with the sale of our new Double Eagle tankers. These were the first commercial ships (two with an option for another two) sold for export by a U.S. firm in nearly 40 years! This news rocked the world shipbuilding industry. Since then, we have signed letters of intent for up to 16 additional tankers, and other customers are lined up. We will be delivering one tanker every 3 months by the end of 1996.

We have also made tremendous strides in our FF–21 international frigate product line. We are the only U.S. shipbuilder to be short-listed for the United Arab Emirates' impending purchase of new frigates. We have already bested international competition in that country in winning a contract to manage the Abu Dhabi Ship Building Company, and just 2 months ago, won a competition to overhaul six naval vessels for the UAE in that shipyard.

The third and final part of our strategy is the absolute need to continue to improve productivity. The major way to achieve substantial gains in that area is through capital/facilities investment. We are investing in improving our already world-class information technology systems and shipbuilding facilities in order to more completely integrate ship design, planning, scheduling, manufacturing, training, and other ship life-cycle support. We are investing to ensure NNS remains a world leader in the use of process integration, automation and robotics to achieve enhanced productivity. We are investing in an extension to our largest dry dock to simultaneously accommodate both an aircraft carrier and a large commercial ship. We are also investing in a Consolidated Refueling Facility to improve our efficiency for nuclear carrier reactor refuelings and make these projects more affordable for the Navy. Our capital investments amount to $160 million over the next 2 years, and will pay off many times in enhanced productivity, reduced cycle time and lower per-ship costs.

All these actions position Newport News Shipbuilding to be a low-cost producer of quality nuclear and non-nuclear ships. Competing in global commercial markets demands innovative approaches to improving efficiency and building affordable ships. These efficiencies directly benefit our naval product lines. The investments in facilities, process re-engineering and productivity improvements are paying off in more affordable ships for all our customers, including and especially the U.S. Navy.

We've been executing our strategy for 4 years, and it is working. If the proof is in the results, then NNS has the evidence of our ability to compete—demonstrated by our international commercial orders.

What does all this have to do with current plans for building the New Attack Submarines? First, we endorse the concept of low-rate production of submarines rather, than a complete shutdown. But, the current plan for effectively eliminating Newport News as a supplier of submarines and building them only at Electric Boat at the rate of one-half a submarine per year over the next 6 years is simply not affordable. This plan is flawed by the simple economics of shipbuilding. Decreasing Navy shipbuilding backlogs place tremendous pressure on the abilities of any shipyard to distribute the inherent fixed costs of construction—both in facilities and people—without substantial increases in indirect costs per vessel.

Specifically, as I indicated earlier, what we are here to tell you today is that principally by combining nuclear ship construction for both submarines and aircraft carriers at Newport News, the Government will achieve a cost savings of between $6 and $10 billion, even at the projected low-rate production, and even under very extreme future funding assumptions delineated by the Navy.

THE NAVY ADMITS THAT CONSOLIDATING ALL NUCLEAR SHIP CONSTRUCTION AT ONE SHIPYARD IS LESS EXPENSIVE FOR THE GOVERNMENT

Mr. Chairman, the Department of the Navy has just issued its own report, dated May 1, 1995, which defends the Navy's proposed sole-source submarine acquisition plan and criticizes the proposal by Newport News that the New Attack Submarine be competed. This Navy report is essentially advocacy and contains no refutation of detailed, proprietary materials submitted by Newport News to document cost-savings by allowing Newport News to compete fairly for the New Attack Submarine.

Following our initial proposal, Newport News submitted additional information upon request to the House National Security Committee, the General Accounting Office, the Congressional Budget Office (CBO), and the Congressional Research Service. It specifically addressed the Navy's eight high/low ship mix scenarios, and demonstrated that consolidating nuclear shipbuilding work at Newport News will reduce Navy shipbuilding costs by $5 billion to $10 billion over the life of the New Attack Submarine program. For the first five submarines built, the savings will be almost $2 billion.

In its May 1 report, the Navy argues that NNS cost savings, from fiscal year 1995 to fiscal year 2012, will be "only" $1.3 billion in *1996 base year dollars* (easily equatable to $2 billion or more in actual out-year dollars) if both nuclear aircraft carrier and nuclear submarine work are consolidated at Newport News.

This savings to American taxpayers is grossly understated and based on unsupportable assumptions—but the point is made. Newport News will build submarines—and carriers—for billions of dollars less. Our defense will be stronger because our precious defense dollars will go farther.

This committee and every congressional committee is searching for every dollar of savings to balance the Federal budget by the year 2002. If billions are wasted to maintain redundant shipbuilding facilities, Congress will have little chance to succeed in maintaining a strong defense while balancing the budget.

Mr. Chairman, having read and listened to the Navy testimony and their new report, I have written down the logic they have presented. Their reasoning goes as follows:

First, Electric Boat needs the 55N23 or the cost will go up by $600 million on the first two *Seawolfs* and exceed the congressional cost cap.

Second, EB must have the NAS or the overhead cost on the 5SN23 will go up and cannot be completed for the proposed $1.5 billion in the fiscal year 1996 budget.

Third, the NAS needs the SSN23 or Electric Boat's overhead and restart expense will cause the NAS costs to go up by $500 million.

Fourth, if you let Newport News Shipbuilding compete (on a ship that has not been designed and will not be built for 3 years) it will cost an additional $1 billion, and;

Last, if you shut this process down it could cost hundreds of millions of dollars in termination and environmental costs.

If you believe all of this—you're on a merry-go-round and Congress cannot get off. What I am telling you today is that you *can* get off and you *can* control these defense costs—simply by requiring competition.

THE NAVY'S ARGUMENTS AGAINST COMPETITION ARE ESSENTIALLY RHETORIC

Mr. Chairman, I take the strongest possible exception to the Navy's unsupportable assertion that "Electric Boat is the preeminent yard in the United States for nuclear submarine design and construction technology." From every ship and shop where skilled craftsmen assemble at Newport News, the cry goes up: "That's not so!"

The facts are to the contrary. Newport News won 8 out of the last 12 submarines in competition with Electric Boat, and the last two that Electric Boat received (SSN21 and 22) are now hundreds of millions above what Newport News bid. Later Congress had to impose cost caps on Electric Boat's *Seawolf* construction program to control even higher increases.

Newport News was the lead design yard for the *Los Angeles* class. Newport News was the lead design yard for the *Seawolf*. In fact, no other company but Newport News has designed a nuclear attack submarine in over 30 years. But the Navy now says that there will be no future competitions. Electric Boat will be given a $60 billion sole-source submarine business.

Mr. Chairman, at the specific level, the incorrect and unsupported conclusions in the Navy's study are rampant. I would only note here four major ones, which are:

1. That it would cost roughly $1 billion to shut down Electric Boat and restart NNS. Half of that cost is assumed to be incurred at NNS. To put that in perspective,

that is more than the shipbuilder's cost of a current 688 submarine. It simply does not pass the common sense test.

2. After having said that it would cost $500 million to restart submarine work at NNS, the Navy then makes the case that Newport News could compete after 2003. This is totally inconsistent with the first point. Furthermore, we will be permanently out of the business then.

3. That EB's costs will reduce dramatically compared to NNS. This position is not only intuitively false, the fact is that NNS has already taken out great amounts of total cost, while EB has yet to demonstrate that it can stop the ballooning of its per-ship costs.

4. That NNS cost savings are primarily based upon obtaining commercial sales. Our data submitted to the House National Security Subcommittee demonstrates just the opposite—that the overwhelming bulk of the savings comes simply from combining nuclear submarines and nuclear carrier work in one yard.

THE NAVY'S SOLE-SOURCE PROPOSAL IS UNPRECEDENTED, UN-AMERICAN AND UNACCEPTABLE

Mr. Chairman, the private sector has provided the United States with two fully qualified shipyards to design and build nuclear submarines. One shipyard—Newport News—has diversified its product line and struggled to protect its work force. The other shipyard—Electric Boat—has decided not to diversify, on the theory, apparently, that the Navy would protect it by guaranteeing sole-source submarine work for all time.

With the end of the Cold War, there is submarine work for only one shipyard. Newport News should not be penalized for its very success. Newport News should not be excluded from the competition because it can survive—as a shipbuilding company—without contracts for submarine construction. The Interests of the taxpayers, not the interests of specialized companies, should be paramount when Congress makes the difficult decision on how to proceed.

Mr. Chairman, Newport News asks only for the chance to compete, in the finest American tradition, for the New Attack Submarine. To do otherwise would be unprecedented, un-American and unacceptable. The refusal of the Navy to compete the New Attack Submarine is of course a major reversal of the Navy's own past policy for the competitive procurement of attack submarines. But, more importantly, *to our knowledge the Department of Defense has never used the sole source exception to the federal Procurement Statutes mandating competition to deny a willing and qualified producer the right to compete and thereby put him out of that product-line business.* The award of Government contracts, when two fully qualified competitors exist, must be made on the basis of fair competition.

The strength and resilience of the American economy rest upon competitive results, which automatically make rational allocations based upon efficiency and performance. There is no substitute for competition—not in policy, not in practice, not in result.

Newport News asks only to compete for the right to build New Attack Submarines. After 109 years of service to the country, that is not too much to ask of the Navy. We respectfully request that Congress enact legislation that will ensure fair competition.

THE NAVY CAN EASILY ASSURE THAT NEWPORT NEWS SHIPBUILDING'S SUBMARINE SKILLS ARE PRESERVED UNTIL A 1998 COMPETITION FOR THE NEW ATTACK SUBMARINE

Under the Navy's plan, nuclear submarine engineering and construction would be shifted exclusively to Electric Boat. This is fundamentally unfair and extraordinarily expensive. Congress should not allow this decision to stand.

The Navy's position that the New Attack Submarine is being designed for construction only at Electric Boat and thus too costly to change to another yard is unsupportable. First, the ship is not yet designed. Detailed design of the ship is not even scheduled for completion until after 1998, when the first submarine is to be built. Second, we estimate the cost to ensure the design can be effectively built at either yard to be negligible. With today's electronic design technologies, such as we already utilized in the *Seawolf* program, production parameters can be input into the electronic product model at virtually no additional cost.

The design/build team approach outlined by the Navy is a good idea, but it is not new, and the fact of the matter is that most of the improvements can be easily instituted at both yards. We used this concept on the *Seawolf* and continue to use it on current work. The greatest advantage of such teams is to ensure that the designs produced can be efficiently built. Most, if not all, of the significant producibility ideas can be incorporated in the modular construction concept which *both* yards use.

We also reject the Navy's assertion that Electric Boat would do an inferior job on the design if it had to compete. Electric Boat and Newport News have both been the lead design agent for submarines and we have never seen either company not perform in accordance with the highest standards.

SUMMARY

The pending decision on where to build future submarines is a momentous one. If the Navy conducts a competition for New Attack Submarines, the end result will be that the country will save billions of dollars in the cost of building these ships even in the immediate upcoming period where the 5-year defense budget shortfall estimates by the General Accounting Office and Congressional Budget Office range from $50 to $110 billion. This is most significant. The decision will ultimately determine if submarines can be an affordable weapon systems and not bankrupt the Navy's SCN accounts in the future. In order to preserve the savings associated with this competition, the Congress should take all steps now to make sure that the competitive positions of all parties are adequately maintained between now and fiscal year 1998.

Newport News Shipbuilding urges the Congress to support the procurement of the New Attack Submarine (NAS). But, equally important, we respectfully suggest that the Congress and the administration carefully consider what we have said about a more affordable way of implementing that procurement decision, and that we be allowed to compete for the business.

I am confident that this Congress and this committee have the wisdom and the authority to make a sound decision on this issue if given the facts. And, on our side, Newport News Shipbuilding is prepared to live with the results of competition.

Senator COHEN. We will try to confine this first round to 5 minutes. And I will begin by asking, Mr. Fricks, was there any proprietary information in the hands of Secretary Slatkin and the Navy that you objected to being released to the CRS study?

Mr. FRICKS. No, there was not.

Senator COHEN. So you would contradict what Secretary Slatkin indicated today.

Mr. FRICKS. Yes, I would.

Senator COHEN. That simply is untrue?

Mr. FRICKS. We have signed every document, anything that has been sent to us, to release all proprietary data.

Senator COHEN. All right.

Mr. Turner, did you have questions or objections about releasing any of the data?

Mr. TURNER. We had set forth provided the data. We have provided the basis for it, requesting that it be limited distribution to those members in the CRS that actually need it and the committee chairman. We asked that the Navy certify that the two sets of numbers were on a comparable basis.

Mr. Chairman, there have been so numbers batted around and so many ways of stacking and racking and picking and choosing parts of the—and subset of the numbers, that we asked that it be certified that it is on an equal basis. And given that situation, we had no further restraints on the Navy from using that data, which they have had and have all along.

I would also add one other footnote, that we have provided answers to all questions raised of us in prior testimony, particularly in the House National Security Committee, as regards to providing data for assessment on these issues.

We have provided all. We provided them on the schedule requested by the committee and committee chairman. And we have provided the information substantiating the Navy's information they already had, vis-a-vis the request from the CRS.

Senator COHEN. Thank you.

Mr. Fricks, let me just clarify a couple of key points. I think you indicated this for the record. We will do it again.

If you were to go out of the submarine business as such in the future and not be able to effectively compete 2 or 3 or 5 years down the line, Newport News would not close up its aircraft carrier business.

Mr. FRICKS. I would hope not.

Senator COHEN. Second, you indicated, or at least there has been some perception/misperception, that repair work has been taken by the Navy from Newport News and allocated to other yards. Is that an accurate——

Mr. FRICKS. We have had no substantial overhaul work in the yard since 1985 or 1986, so there is none to take away.

Senator COHEN. So there is no really credence to be given to the suggestion that the Navy somehow is trying to load this up against Newport News by taking repair work and putting it elsewhere in order to put you at a competitive disadvantage.

Mr. FRICKS. No. They have made suggestions about taking design work out, but not repair work.

Senator COHEN. All right. Could I also ask as to whether or not you would have to have any additional work in order to carry you over to the point where there could be an up front competition?

This has been suggested by some who have spoken on behalf of Newport News. You have indicated that you need absolutely no additional work in order to put you in a competitive position with Electric Boat yard, should that be the case.

Mr. FRICKS. What we have said, Mr. Chairman, is that we need to keep our design work that we have today on the 688 and the *Seawolf*. We would like to participate in a very low way on the New Attack Submarine so we have coordination, so we will be ready to build the New Attack Submarine on time.

And we would like to maintain the work that we have today that we are getting on a competitive basis in the small voyage repair type work for submarines.

Senator COHEN. Mr. Turner, what would be the cost impact, if any, on the current cost of the two SSNs, the 21 and 22, if the third *Seawolf* is not completed?

Mr. TURNER. The increased costs on those two submarines is about $45 million to $50 million.

Senator COHEN. Each?

Mr. TURNER. No. Total.

Senator COHEN. $45 million to $50 million.

Mr. TURNER. Right. Which was not the number that I heard a little bit ago, quite frankly.

Senator COHEN. All right.

And Mr. Fricks, the savings that you project for submarine construction at Newport News, to what extent is that a case of fixed overhead costs, or is that spread out through other Navy work that has been assigned or acquired by Newport News?

In other words, the projected cost savings, is that a matter of fixed overhead, or are you spreading that out through other Navy work?

Mr. FRICKS. Well, if I understand your question correctly——

Senator COHEN. Is it confined—are the savings attributable simply to the submarine construction, or is it going to be because——

Mr. FRICKS. No. The $5 billion to $10 billion a year are the savings, total savings, to the government across all work that we do.

Senator COHEN. So in other words, the overhead will be spread throughout all the work you do, not simply on the——

Mr. FRICKS. There could be some savings on carriers, also. That is correct.

Senator COHEN. Senator Warner?

Senator WARNER. Thank you very much, Mr. Chairman.

I want to go back over perhaps some of the ground covered by the chairman, to be very specific. And I will try to do it quickly.

In the testimony filed with the committee by the GAO, there is a reference to possible "computational errors" and "questionable assumptions" in the cost data you furnished to the CRS, the GAO and the CBO.

As I understand it, your yard agreed to furnish specific costing data in response to eight different workload scenarios. I understand that the other yard was offered the same opportunity and elected not to provide that data.

Do I have a correct understanding about how your data was submitted? And what is your response to the statements by the GAO to which I referred?

Mr. FRICKS. The CRS asked for eight different scenarios with high/lows. We wound up with 16 different scenarios, actually. We submitted that data to them on time.

It is my understanding that Electric Boat did not provide that data in those scenarios that it could be analyzed, as of last week. If they have done so this week, I do not know.

With regard—what was the second part of your question?

Senator WARNER. Do I have a correct understanding about how your data was submitted? And what is your response to the statements by the GAO today?

Mr. FRICKS. The GAO—we spoke with the GAO recently about their comment. They said they found situations that they think the savings were understated and some that were overstated.

But it is my opinion from the GAO, and you can ask them today, that it would not have any significant impact in total when you net the two together on our savings.

Senator WARNER. Okay.

Quickly. Mr. Fricks, there appears to be some misunderstanding about the type and quantity of work you are talking about when you ask that Newport News Shipbuilding be kept competitive until the New Attack Submarine is ready to go to contract.

This was raised by the Chairman. And I ask likewise, I notice a substantial difference between your estimates and those of the Navy's concerning the time, effort and cost of bringing Newport News into the New Attack Submarine design process sufficiently to permit you to compete for the construction contract.

Therefore, would you state specifically the type, quantity and approximate cost of submarine work you are asking Newport News be allowed to continue to perform in order to be competitive for the New Attack Submarine, and state specifically the level of work and approximate cost of involving Newport News in the design process for the New Attack Submarine sufficiently to retain a competitive position.

Senator COHEN. Would you like to have the question repeated?

Mr. FRICKS. I think I am going to have—I have about three or parts here. If I miss a part, you can tell me.

First of all, we are talking about essentially keeping the work we have today, that we are doing for the government today. There is no increase in cost to the government.

We are talking about doing the 688 design work and doing the *Seawolf* design work and continuing on with our SRAs and DSRAs, which are competitively bid. They are like 3-month repairs to submarines.

We are not looking for major overhauls or refuelings. So there is no cost to the government to keep us in the business, unless they were to try to come in and take away our design work. So we are asking to keep what we have. There is absolutely no cost to the government.

With respect to what do we need on the new attack design work, we are not asking to take over the new attack design work. I think it was said that it has already been competed. If it was competed, it was competed when I was asleep. I think it has been allocated to Electric Boat. But never mind that.

We do not need the design work. Our facilities are very similar at Newport News as they are to Electric Boat. There is no reason in the world that we cannot use their output with some slight modifications and coordinations with our company to build the New Attack Submarine.

Senator WARNER. All right. The Navy report attributes expected construction efficiency at Electric Boat due to a multi-skilled work environment. This is totally inconsistent with their treatment of the efficiencies that would accrue to Newport News in their role as a multi-product yard.

Although I acknowledge that there are some benefits in having multi-skilled workers, it appears quite obvious to me that a nuclear welder on a carrier could do nuclear welding on a submarine more efficiently than a nuclear submarine machinist could do nuclear welding on a submarine. Do you agree?

Mr. FRICKS. Yes. The point here is that when we look out in the outyears, we do not know how many carriers and how many submarines we are going to be building. They could all be very low production.

But we have the capability, if you have it in one yard, to take a welder off a submarine and put a welder on a carrier. If you split the yards apart, you will not be able to do that.

We have multiple skilling in the yard today, and we work on multiple products. So we are able to deliver that kind of flexibility.

Senator WARNER. My time has expired.

Senator COHEN. Senator Kennedy.

Senator KENNEDY. Thank you very much, Mr. Chairman.

Mr. Fricks, I think you were here earlier when I read some language which, as I understand it, is generally circulated around both the committees and the Congress in a white paper, which I understand has been out there and available, as being suggested language that might be offered on an authorization.

Are you familiar with the language that I read?

Mr. FRICKS. No, I am not.

Senator KENNEDY. Well, that is interesting, because we will go back and I will include specifically the white paper and the——

Mr. FRICKS. We would like to have some language written in the legislation, but——

Senator KENNEDY. Well, I am just asking you. You are not familiar with the——

Mr. FRICKS. Not with what you just read, no.

Senator KENNEDY. —what is being put out in the name of the yard as suggested language that would be the basis for competition?

Mr. FRICKS. I am familiar that we would like to have some language that says that there would be competition. Is that specific language or not, I do not recognize that.

Senator KENNEDY. Well, I would like to—let me read it to you, then——

Mr. FRICKS. Okay.

Senator KENNEDY. Because it is—I mean, this is not any mystery. It is being generally circulated here in the Senate and the House as being language that is advanced by either you or your company or your interests.

Mr. FRICKS. It could very well be.

Senator KENNEDY. I know, but—I do not want anybody to be surprised by it. And we want to know, once you hear it, what is your understanding of it.

And it says, "Include in authorization language provisions that mandate full and open competition for New Attack Submarines and direct the Navy to take no action to predetermine the outcome of the competition, require the Navy to award the procurement based on competitive bids as submitted by the contractors, not as amended by the internal discretionary Navy evaluation, because two large, financially sound businesses are involved. "Let fair and open competition, based on bids as submitted, determine the price required, design participation by Newport News in the New Attack Submarine to ensure fair and open competition in 1998."

Now, the language, I suppose, may be interpreted in a number of ways. I think it would be worthwhile to know what your understanding of that language is. What is your understanding?

Mr. FRICKS. My understanding is that would require, as it says, fair and open competition.

Senator KENNEDY. On what basis? On the bottom line?

Mr. FRICKS. Price.

Senator KENNEDY. It would only be bottom line.

Mr. FRICKS. Price.

Senator KENNEDY. And does that preclude any sort of cross subsidies from other assets of the Newport News in making the competition, in bidding?

Mr. FRICKS. Well, Senator, to tell you the truth, you know, we are not going to use profits from something else. We do not need to. We have already testified we have an enormous cost advantage.

Senator KENNEDY. So you would not use any profits from any other——

Mr. FRICKS. No, I would not, would not need to.

Senator KENNEDY. And what is your assumption—what did you indicate were the profits that you had on the aircraft carrier?

Mr. FRICKS. I estimated about a 15-percent profit margin on total estimated final costs.

Senator KENNEDY. And none of the profits would be used in any kind of a bid process, you are saying.

Mr. FRICKS. I am saying I do not need to use anything, with a $5 billion to $10 billion cost advantage.

Senator KENNEDY. As someone who has observed sole sourcing in shipbuilding versus competition, what has been your own observation as to how the taxpayers made out?

Mr. FRICKS. Well, I can look at a carrier, Senator, and tell you that we reduced the cost of a carrier, the manhours on a carrier, about 25 percent over the last four or five carriers. So I think they have made out very well on carriers.

Senator KENNEDY. Well, from other shipyards and various ships, I mean, you say——

Mr. FRICKS. I would not have—other yards——

Senator KENNEDY. At a 15-percent profit, I suppose you could say that that is a pretty good bit of change, a pretty good chunk of change, for the companies.

Mr. FRICKS. Well, I have to tell you, Senator, that is before any cost that the government does not allow. That is before interest. That is before taxes. So that whittles down real quick.

Senator KENNEDY. Well, how do you go about for, say, a taxpayer, that if you assume that the Navy's figures are accurate in terms of what it would cost, in terms of overhead, to have Electric Boat and overhead in terms of Newport, you have indicated that you are going to stay in the business in any event in nuclear submarines, what do you say to any taxpayer saying if you have two outfits that are out there ready to compete and can compete and both have a solid record for competition over the period of the past, and we have heard as well from Mr. Turner the savings that they have had up at Electric Boat, why, from a common sense point of view, is the taxpayer not benefited from real competition rather than what is understood, and that is that if Newport gets the whole shebang, that as far as the long-range interest of Electric Boat in being able to compete in the nuclear, would be heavy compromised?

Mr. FRICKS. Well, Senator, let's be real honest. There is not going to be competition way out in the future. It is going to basically be a winner take all. There is not going to be competition for submarines out in 2003 or 2005. There is not enough ships to have a competition out there.

Senator KENNEDY. Well, if it is going to winner take all, and you are going to have, after the design center has been out there, why not let the competition take place? And then if you are able to get it, you get it all? Why not have that?

Mr. FRICKS. That is what I am trying to say. Let the competition take place now.

Senator KENNEDY. Well, they have——

Mr. FRICKS. That is part of the reason I am here.

Senator KENNEDY. Well, they have already had a preliminary kind of competition.

Mr. FRICKS. No, they have not.

Senator KENNEDY. Well, we can go around and around on it, but——

Mr. Fricks. There has been absolutely—when did they have a competition?

Senator KENNEDY. But what is the reason not to have the competition after the design formula is completed in terms of all of the additional kinds of building of the submarine?

Mr. FRICKS. First of all, we are still finishing the design on the *Seawolf*, which will be delivered a year from now. You do not finish a design the first day you start construction. It is concurrent with the work.

By the time you get out that far, we will be out of the business. We will have rolled up all of our submarine business. We would not have built a submarine for about 5 or 6 years. The Navy has already testified that our start-up costs would be $500 million. Now how could you have a competition out there? It does not make sense.

Senator KENNEDY. Well, that was not my understanding from Mr. DeMars's response to my question, asking him about making that available to Newport to be able to go ahead with the competition. That was not my recollection.

My time is up, Mr. Chairman.

Senator COHEN. Senator Robb?

Senator ROBB. Thank you, Mr. Chairman.

I have one specific question for each of our witnesses, and then I would like to ask a general question if both could respond.

Mr. Fricks, the suggestion was made by Secretary Slatkin and others that it would result in a 2- to 3-year delay. Would you respond as specifically as you can to the accuracy of that statement, and if you differ, why you differ?

Mr. FRICKS. I have asked the Navy repeatedly about that question. What is the basis for that? I have never gotten an answer, not even—I have said, "Just give me the logic. Do not give me the schedule. Give me the logic behind it."

There has been no logic forthcoming.

Senator ROBB. Based on your experience, what delay, if any, do you think would be an accurate reflection?

Mr. FRICKS. I think an absolutely zero delay. We are 3 years before cutting the first piece of steel. How could there be a 2- or 3-year delay?

I have asked the Navy, and there has not been one shred of documentation or even logic behind that statement.

Senator ROBB. Mr. Turner, if I may, just a single question to you. When do you think Electric Boat will be ready to compete? When would you advise the Navy to allow competition for any work on current or future NAS design or construction?

Mr. TURNER. As we look at the present profile, there is the first ship in 1998. Then there is one in 2000. Certainly beyond the 2000, when you get multiple ships per year, is the time that would be certainly be no big issue with the competition.

When you are in the one ship every other year or very low rate production, you really do not have a basis for competition. Just as

Mr. Fricks said, out in the future you do not have enough business for one, when you are at that level, you do not have one, also.

Senator ROBB. Am I interpreting your response, then, that you would not be in a position to accept competition throughout the remainder of this century?

Mr. TURNER. Well, there is only one submarine in the remainder of this century, just one.

Senator ROBB. I understand, but we are talking about 5 years before competition could exist. And we are already talking about a 2- to 3-year delay if such were to take place.

I am just trying to establish some point of reference for when you believe that you would be willing to accept competition.

Mr. TURNER. Beyond the year 2000.

Senator ROBB. Beyond the year 2000. Now let——

Mr. TURNER. And there is only one submarine in 1998 left.

Senator ROBB. Let me ask a question to both of you, if I may. Each of you gave testimony that there were clearly some matters that were in conflict. But I would ask each of you, to the extent that you can, to comment specifically on areas in the other's testimony with which you have substantial disagreement.

Mr. Turner, you had an opportunity to testify first. Perhaps you would like to have an opportunity to respond to that question. Then I will ask Mr. Fricks if he would comment.

Mr. TURNER. This is the third testimony. I have been going first all the time. So, you know——

Senator ROBB. I would be happy to reverse the order, if you would——

Mr. TURNER. No, whatever. Let me address a couple of things. It is very easy to stack and rack numbers and cast them out and see where they fall.

If I might go back to the first testimony in other hearings and reiterate it, the latest was in the ad, of a $2 billion savings on five New Attack Submarines. If I can take just a moment and build just a quick summary of that.

If we have five New Attack Submarines and the numbers are about what the Navy has indicated the costs will be for the fifth ship, we are looking at about a $11.1 billion, $11.2 billion Shipbuilding and Conversion, Navy (SCN) number.

If we look at the portion of that $11 billion of SCN that goes to the shipbuilder on which either of us can spend money or make savings, whatever the case may be, it is about 45 percent of $5 billion.

So we just up right in front, and we have a number that just does not compute, that you are going to have a 40-percent saving. There is nothing. There are no facts anywhere that support the 40-percent savings.

Senator ROBB. To test that theory, why would not two competing bids illustrate the fallacy of that argument then?

Mr. TURNER. It has nothing to do with competition. This is just the validity of the numbers. If I go further, one-third of the cost of a submarine about is material, one-third is labor.

You get down to about a third left over, or maybe $1.6 billion—take some profit out, $1.5 billion for material of these five ships,

$1.4 billion for direct labor, that leaves you $1.2 for overhead. This is total overhead, much of that.

In fact, in their own publications, Newport News has said 70 percent of their overhead costs is associated with people costs, FICA, vacations, sick leave, sick pay and so forth. That is going to get paid wherever those hours are spent.

So that leaves a very modest amount. And if you look down at the total that can be saved, it is in the $400 million category, that is a total that can be spread. Once you start spreading it, you cannot spread it all, so the $2 billion suddenly becomes about $300 million at its very max.

So I have great difficulty dealing with the assertions as to the degree of savings, notwithstanding that you are going to have to have the entire program to go forward with to save the $5 billion to $10 billion that got added on at the next testimony.

If we then look to those numbers of ships, and we only compete on the first one, and we have similar profit ranges for the submarines as have been related to the carrier, then I suggest there is not going to be a saving at all.

It is going to be an increased cost. That is the major area that I would address in that the numbers, the dollars to save, the dollars to spread are just not there.

And let me summarize it. Everybody has racked and stacked things. But I can put my position in one very clear point.

We will take the fiscal year 1998 rate that we did work for the government at Electric Boat, which was the largest volume year we had in the last ten, greatest overhead spread, you name it, we will take the 1998 rate, I will sign up to do work, all the remaining work, for the rest of this decade at that same rate, corrected only by the rate of inflation.

Senator ROBB. You meant 1989, did you not?

Mr. TURNER. 1989, yes. Excuse me, sir. Thank you very much.

Senator COHEN. Senator Robb's time has expired, but I think——

Senator ROBB. Could we just get the response so that Mr. Fricks——

Senator COHEN. Sure.

Senator ROBB. Could I just ask Mr. Turner and Mr. Fricks, because this obviously is difficult to remember, exactly what your opposite number said?

If, for the record, you could amplify your response at this point. If there were other points that were made that you find you are in substantial disagreement with, if you could just amplify that for the record.

Mr. Fricks, if you could respond to any of the testimony that Mr. Turner has given.

Mr. FRICKS. Well, I do not know that I am in total disagreement with his testimony in the sense that they have made changes at Electric Boat. I think that is probably true.

The point is that I think there have been bigger changes at Newport News. And while they have made some re-engineering efforts, we have, I think, doubled that.

We are the only shipyard, American shipyard, that is building work in the commercial business, which is the most competitive business in the world. I think that demonstrates our level of cost.

You can go through a lot of these things. I think we had this in the last testimony that Mr. Turner was going through, and that did not prove out to be correct.

We said that the savings come from both submarines and aircraft carriers combined. So I think his numbers are incorrect. I think their costs to be higher than what they project, if *Seawolf* is any basis.

But what we have here is that the Navy themselves have said that the savings are about $2 billion. Now I know they discounted back to 1996 dollars. I do not know why they did that except to make the numbers smaller. You are going to get the dollars in the outyears. There are going to be at least $2 billion.

We are saying $10 billion. They are saying $2 billion. The CRS, the GAO, the CBO probably say you are somewhere in between. But we are talking $4 billion, $5 billion, $6 billion. I mean, how many billions does it take to have competition?

Senator ROBB. Thank you, Mr. Fricks.

Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Robb. Senator Lieberman.

Senator LIEBERMAN. Thank you, Mr. Chairman.

Mr. Turner, could you tell the committee how many people were employed at Electric Boat in Groton and Quonset Point at the height of work there in the last 5 years?

Mr. TURNER. The maximum number of people employed was about 23,000, and that was in the 1989 time frame.

Senator LIEBERMAN. Right. And how many are employed there today?

Mr. TURNER. Slightly under 15,000.

Senator LIEBERMAN. And under current projections, assuming that funding is completed this year for the third *Seawolf*, how many will be employed at Electric Boat in 2 years, 3 years?

Mr. TURNER. The lowest level, based on the projections, are about 6,000.

Senator LIEBERMAN. Right. So we are going from 23,000 down to 6,000, which obviously shows that we are not operating at Cold War levels, as some may have suggested. And it dramatizes the impact of not only reductions in defense spending but of the tight management at Electric Boat

Let me ask you very quickly, and I would just ask for a brief answer, do you agree with Secretary Slatkin's answer to the questions posed particularly by Senator Cohen that without the completion of the SSN–23, Electric Boat would close?

Mr. TURNER. I agree with the answer in that she said without the SSN–23 or some equivalent work, we would close the shipyard portion.

It remains to be seen whether the engineering would close, depending on what course of action the Navy would choose. But there would not be any work to do, so there would be no choice except to close.

If we do not get the SSN–23 in this time frame, with the fiscal year 1996 budget, we are going to close Quonset Point facility, which has some of the most modern submarine building machine tools and equipment in it of anywhere in the world. We are going to close it at the end of the first quarter next year. Close; walk away; gone.

Senator LIEBERMAN. This is not theoretical. We are looking at that path we are on right now.

Mr. TURNER. Absolutely.

Senator LIEBERMAN. And I assume, and I ask for a very brief answer here, that you agree that you would not be able to effectively compete with Newport News for the first two New Attack Submarines, because of the additional work that they have to sustain overhead.

Mr. TURNER. I believe if—the basis for that gets back to how do you, with such disparity in the—with a zero workload versus a significant workload, how do you get a level playing field for a bid?

If we are looking at the cost per hour to do work as we project forward, what we already have in our forward pricing rates to the Navy, which are audited by the DCAA, you look forward and carry those rates forward, we are competitive with anybody to do that kind of work.

But if we have no work base, none, at that point in time, except for what we are bidding on, it is going to be exceedingly difficult, particularly when you are bidding with a company that has a significant workload with good profits in it and can take a cut on the first one, and school is out, and make it up on volume.

Senator LIEBERMAN. Right. Well, I hear your answer.

And I must say, Mr. Fricks, as I follow the proposal of the Newport News, listen to the testimony from the Navy and from the two of you this morning, that it seems to me that the policy that Newport News is asking is not for economic competition.

You are pursuing a policy of economic homicide. You are trying to kill Electric Boat.

And I guess in some measure, you have agreed with that. You said at one point, in response to an earlier question, "We will be out of the submarine business if we don't get this work, but we won't be out of business."

And again you said, "We don't need two nuclear capable shipyards."

Obviously, you are entitled to that position, a company is entitled to pursue whatever aggressive strategy it wants to pursue, but what grates me is that you are asking us to pay for it.

I mean, you answered Senator Kennedy's question earlier about whether you were not going to use profit from other programs that the government is giving you, aircraft carriers, and the presumption, not just——

Mr. FRICKS. I think I answered the question we would not——

Senator LIEBERMAN. Excuse me. Excuse me. I am going to finish, and I will give you plenty of time.

The CVN–76 and the presumption that every 4 or 5 years you are going to get another carrier, overhaul, et cetera.

You said you are not going to use the profits, that you could produce submarines more cheaply without that. But that is totally different from the proposal that you have made up until this point.

I mean, can you sit there and say to us that if you did not have any of that other governmental work, aircraft carriers, LPD options, overhauls, you would not be in the same position as Electric Boat that you could save $5 billion to $10 billion?

Mr. FRICKS. My turn?

Senator LIEBERMAN. It is your turn. Answer the question. I mean, it seems to me you are not asking for competition. You are asking for us to subsidize your closing of Electric Boat, ending your competition.

And then, I add this finally before I let you go, Dr. Cindy Williams, testifying later for the CBO here, says in her testimony, "The question is whether a shipyard would bid extremely low to win the contract and then raise the price after the losing shipyard left the submarine production business."

That is a question we ought to worry about.

Senator COHEN. Mr. Fricks, would you like to answer?

Mr. FRICKS. Well, I am not quite sure which question I am answering, but if we are talking about if we have no work at all, I mean, obviously we would be out of business. There will not be two nuclear capable yards, so we could not bid.

Senator LIEBERMAN. Well, is that not the same situation that Electric Boat is going to be in if you——

Mr. FRICKS. I do not understand your point. I mean, the point is that we want to compete. And in fairness not to Electric Boat, not in fairness to Newport News, but in fairness to the American taxpayer, how much is it going to cost to build these submarines?

We are saying give us the opportunity to compete. Do not give us the work. We are not asking for the work. We are merely asking for the opportunity to compete. And I really do not understand your point.

Senator LIEBERMAN. You see, I am saying you are asking for the opportunity to compete unfairly, because the competition will be subsidized by the American taxpayer. If you are on an equal footing with Electric Boat without any other work, you are not going to be able to compete effectively.

My time is up, but I have to tell you, you have sole sourcing on the aircraft carriers. You have negotiated an 80–20 cost share rather than the usual 50–50 cost share.

And for you to come to Congress now and—we have all supported these programs. We supported sole sourcing of the aircraft carrier to you the last time around. For you to come here now and say you are being treated unfairly is outrageous.

Senator COHEN. Mr. Fricks, do you care to respond?

Mr. FRICKS. Well, I just do not understand that at all. I really do not. We have work. We can combine the Newport Shipbuilding into one base, and we can save billions of dollars. To say that is unfair to the American taxpayer just baffles me.

Senator LIEBERMAN. Well, we are obviously not connecting. I am saying you are doing that with our money.

Mr. FRICKS. And I am saying that is not true.

Senator LIEBERMAN. Your whole proposal is based not only on the aircraft carriers but in taking work on overhauls from the public yards, including Portsmouth, and having—assuming that you are going to get the LPD–17, even though the folks at Bath and Ingles are going to compete on that. I mean, it just does not hold up.

Mr. FRICKS. Well, first off, the overhaul is categorically untrue. There are no submarine overhauls in our base. There are none. So that is totally untrue.

Senator LIEBERMAN. That is not the way I read your proposal, and I will be glad to go over it and submit specific questions based——

Mr. FRICKS. Well, we would be glad to provide that at that time.

Senator LIEBERMAN. —on the public proposal that you submitted. I mean, you are advertising, saying that not to compete the New Attack Submarine is unprecedented, un-American, unacceptable.

That is exactly what we have done for your company with the aircraft carriers all along.

Mr. FRICKS. We would be glad to compete the carrier, if you want to.

Senator LIEBERMAN. Okay. I will submit more detailed questions, and I look forward to your answers.

Senator COHEN. Thank you.

Senator Warner?

Senator WARNER. Thank you, Mr. Chairman.

If I can summarize what is really before us today—[laughter]—it is whether or not these two yards will be given an opportunity to compete fairly and openly for this first submarine. That is the issue.

Mr. Fricks states, from your perspective, you need to have no more than ten people working on the design, is that correct?

Mr. FRICKS. About that, Senator.

Senator WARNER. Ten or twelve.

Mr. FRICKS. A small number of people.

Senator WARNER. Maybe a cost to the government of $1 million. And to continue what you have been doing under contract on design work 688 and *Seawolf.* Is that it?

Mr. FRICKS. That is it.

Senator WARNER. Now is that unreasonable, Mr. Turner?

Mr. TURNER. The 688 and the *Seawolf* contracts are in place, and I have no comment. I just hope he hurries up and finishes *Seawolf* so I can get it built.

Senator WARNER. But I mean, you must believe——

Mr. TURNER. Let me—I have not seen the proposal for the——

Senator WARNER. We are making it right now. Ten people and continue the work——

Mr. TURNER. Until I see the detail—I do not have a comment on it until I have seen the details, what that responsibility will be, what they will participate in and how they will do it. He has had more than that number of people working up there in the factory on *Seawolf* anyway. So I will comment on it when I see it.

Senator WARNER. Well, again, ten people on the design team continue the same work they are doing on 688 and *Seawolf*, and that puts them in a posture to protect the interests of the American taxpayer on bidding on that first submarine. And I simply ask you: Do you object or not object?

Mr. TURNER. I do not have any objections to two parts of it. The third one, I want to see the details.

Senator WARNER. What is the third one?

Mr. TURNER. The third one is the people working on the detailed design, because there is a lot of proprietary information associated with the design.

Senator WARNER. Under what circumstances would you find an objection to having ten people participate in a design?

Mr. TURNER. I would like to see the proposal that someone has in mind as to how to do that, and I would be glad to comment on it at that time.

Senator WARNER. Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Warner.

Maybe I could ask you, Mr. Turner, what would be required to allow Newport News to remain sufficiently informed with respect to the design work on the New Attack Submarine in order to compete for leadership?

Mr. TURNER. With the design/build process that is under way and the single database, electronic database in which it is being gathered, as Ms. Slatkin referred this morning to this same process that Boeing has used successfully on one program already and is now using on the 777 and also follow programs, you do not have a design that you can go spread out and look at à la drawings for a long time past.

You are looking at the 3–D solid models in a real time environment in a computer-based system.

First off, I think that the ten to twelve people, or whatever the number is, is only the beginning of getting the nose under the tent to try to go out through. There is no way that ten or twelve people can keep up with what is going on in the design.

Second off, the design/build provides for the incremental development of this database, which kicks out and starts to provide build activities which predate—there are long lead kinds of items, which go forward and have to start being produced well ahead of the fiscal year 1998 date for the ship itself.

I think that if we were to look at it, and I believe if we look at many other weapon systems and we look at the acquisition requirements, that to have a competition when you do not have a completed design is really going into something very, very blind.

What assumptions one makes, what are the specs that are laid out, and what are the details of it, you do not have in front of you so you can see it. It is not there.

So to me, the best bet is as is laid out by the Navy, which is to continue the design/build process, to have a completed design that will save money on the lead ship and the design of it in the long run.

Once the design is completed and the Navy has, as they testified earlier this morning, saying that it is certified, then you can proceed with competition at that point in time.

I do not think that two persons or two companies can effectively or cost effectively design the New Attack Submarine to meet the intent and time that the Navy has it scheduled for.

Senator COHEN. Mr. Fricks, in briefings the Navy has given us, the problem of the so-called over the shoulder design participation that has been proposed by Newport News is that—and this is the Navy's position—when competition occurs on the lead ship, the

Navy has to assume the risk of invalidated plans, which would then imply a substantial increase in the cost of that first lead ship.

I would like your response.

Mr. FRICKS. I do not understand their basis for that. We have had lead design agents for 40 years on all the flights of submarines. We are the lead design agent for the *Seawolf* today.

We have a computer-generated model. In that model, the parameters are set forth, the building criteria at both Newport News and Electric Boat, like how much can they lift, how much can we lift.

The facilities are very similar between the two yards. I see no reason why we could not use the Electric Boat design data, as they are using ours today. So I see no basis for that whatsoever.

Senator COHEN. And, Mr. Turner, Secretary Slatkin talked about the closed kimono in terms that if you had to go to a straight competition without the benefit of the third *Seawolf*, that that data for all practical purposes would not be shared in a way that would allow both companies to go forward in a relatively short period of time.

Mr. TURNER. I believe what she was referring to was the fact—and I think it has been over a long period of time, having been on both sides of the river in that particular situation, where neither shipyard puts all of its best ideas and activities and developments up front, when they know there is going to be a competition down the road.

You come with enough to keep the process going, but you have a certain degree of hold-back because you do not want the other guy knowing everything that you plan to do or how your manufacturing plans will go and the things that you will do in order to make it more producible and what have you.

So I think the Navy's experience has been that that is not a very successful way. It was tried to a large degree on the *Seawolf*, but there were enough *Seawolf*s to go around.

So their experience would give them a better way of commenting on it than me, but my observation would suggest that you do not get the best.

Senator COHEN. Well, on behalf of the entire subcommittee, let me thank you for the testimony of both you gentlemen. Obviously, it is very clear why this has generated so much controversy.

There are real dollars at stake and real jobs at stake. If you were to put this in the context of an environmental debate and talk about endangered species, you would say that when it is gone, it is gone.

And we are looking at the possibility of either Electric Boatyard being gone for good or the possibility of the submarine work at Newport News being gone for good.

And those are the kind of policy issues that we have to wrestle with: dollars, jobs, whether or not we want to have two yards or one yard in which all of the shipbuilding capability is concentrated as far as aircraft carriers and submarines are concerned, and what that means for the possibility of future cost growth or cost controls and what it means to our national security policy.

It is not going to be an easy decision to resolve, but it is our job to try to do that the best we can, and we will call upon other experts in the field. This will not be the only hearing, I can assure you, before we come to resolution of this issue.

We are going to break now until the hour of 2:15, at which time we will come back and hear from our third panel of experts from the Government.

Senator **Warner**. Mr. Chairman, could I ask that Mr. Fricks be given an equal opportunity, as Mr. Turner, to state the job losses that you might incur?

Mr. **Fricks**. We have—I believe the record is we have lost more jobs than Electric Boat. We have come down to 11,000 people over the last 6 years. We intend to come down 4,000 or 5,000 more.

So total numbers of people are very comparable between the two when they go down to 6,000. So the loss of jobs and the pain and suffering of doing that, I think, are comparable between the two companies.

Senator **Warner**. Thank you.

Thank you, Mr. Chairman.

Senator **Cohen**. Let me also indicate to the audience, I am told there is another hearing scheduled in this room at 2:30.

We will try to see whether they can move that hearing, or we will move to another room, but we will keep everybody apprised, the remaining witnesses and those who want to attend, as well as the media, as soon as possible. [Recess.]

Senator **Cohen**. We just had a vote which is about to be completed, and I expect other Members to be joining us.

Mr. O'Rourke, why do you not begin, then Dr. Williams, then Mr. Davis?

STATEMENT OF RONALD O'ROURKE, CONGRESSIONAL RESEARCH SERVICE

Mr. **O'Rourke**. Mr. Chairman, thank you for the opportunity to appear before you today to testify on these issues. With your permission I will submit my formal written statement for the record, and then I am going to proceed to talk to these briefing charts over here.

Senator **Cohen**. Do you want to pick up one of the mikes? Pick one of these up right here.

Mr. **O'Rourke**. I am going to see if I can do this without the microphone——

Senator **Cohen**. Okay.

Mr. **O'Rourke**. If my voice is loud enough.

Mr. Chairman, I am going to talk about three things today. I will first talk in general about requirements for attack submarines. Then I will talk a little bit about the program-specific issues, then I will move on to the industrial base aspects of the topic.

SSN Force-Level Requirement -- Two Competing Statements

- Bottom-Up Review (BUR) (Sept. 93)
    - 45 to 55 SSNs
- JCS (1992; updated mid-93)
    - 51 to 67 SSNs
        - Including 10 to 12 with Seawolf-level stealth by 2012 (*not* 2010)

First, on the issue of general requirements, there are currently two different statements of the attack submarine force level requirement.

One of these is the Bottom-Up Review requirement, which calls for a force of 45 to 55 boats. And the other is an earlier JCS study that calls for a somewhat larger force, including 10 to 12 *Seawolf*-level-stealthy boats by the year 2012.

When the Navy refers to the need for 10 to 12 *Seawolf*-level-stealthy boats, they are referring to this earlier JCS study rather than to the Bottom-Up Review.

I would also note that the requirement for 10 to 12 *Seawolf*-level-stealthy boats is a requirement to be met by the year 2012, not 2010, as was mistakenly stated at one point earlier this year.

Requirements for SSNs

- SSNs -- not just for ASW
- non-Russian and Russian considerations

	non-Russian		Russian
	2 MRCs	presence	
Numbers			
up to 45	X	X	
more than 45		X	
Features			
flexibility	X	X	X
littoral ops	X	X	
Seawolf stealth			X

In talking about requirements for attack submarines, there are two things that can be noted. The first is that although attack submarines are often thought of primarily as anti-submarine warfare platforms, they do in fact perform a variety of missions, including but by no means limited to anti-submarine warfare.

The second is that although there has been quite a focus recently on the issue of the Russian submarine construction program, in fact requirements for attack submarines are driven by non-Russian, as well as by Russian, considerations. That is summarized on this chart.

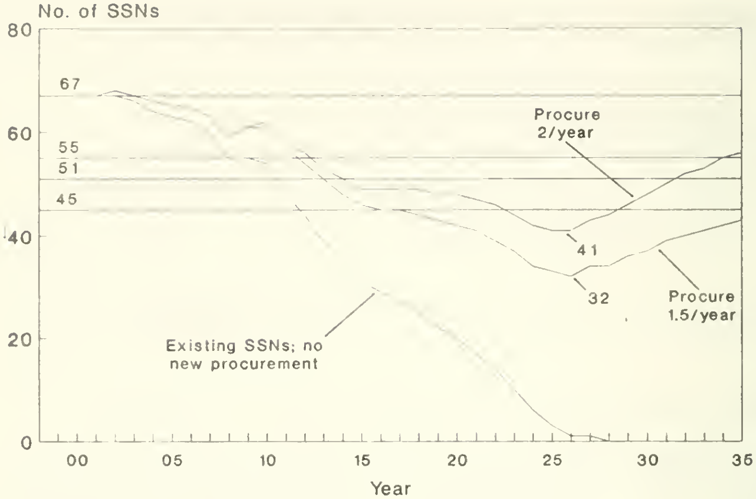
1990s -- a decade-long near-hiatus in SSN procurement

- 4 SSNs to be funded FY90-FY99
    - final SSN-688 (FY90)
    - SSN-22 (FY91)
    - SSN-23 (FY96)
    - first NSSN (FY98)
- 0.4 SSNs per year for 10-year period
- affects downstream procurement rates

If the administration's plans are carried out, then during the decade of the 1990s, we will fund a total of four attack submarines. This works out to a rate of less than one-half boat per year during a 10-year period.

That is a near hiatus of considerable length, and it will have an effect on downstream procurement requirements for attack submarines. It will, in effect, create a bow wave requirement for attack submarine procurement. The next two charts will help illustrate that.

SSN force levels
1998-2035, 30-year life



Source: Prepared by CRS, 3/95, based on U.S. Navy data.

The issue of the attack submarine force levels is not so much an issue for the near term in these years [indicating] or even for the mid-term. It is an issue that starts around 2020, because it is in the 2020s that the attack submarine force will be composed solely of boats funded in the 1990s onward.

Now, as you can see in the top line of this chart right here, this is the force level of attack submarines that will result if we procure submarines at a rate of two boats per year.

Now nominally, that would be enough to sustain an attack submarine force of 60 boats. But because we will not be getting very many submarines during the 1990s, the result will now be a force that bottoms out at 41 boats around the year 2026.

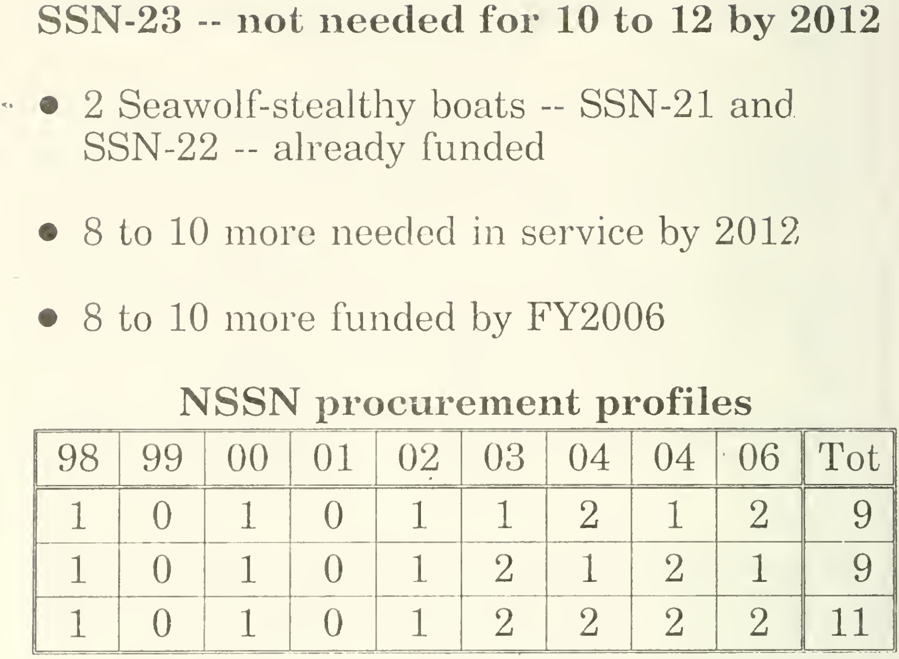
Force levels and procurement rates

Force level	Rate to sustain through 2020s			
	30-year rate	After 90s near-hiatus	Extended hiatus	
			hiatus until	resulting rate
45	1.5	2.05	FY02	2.4
51	1.7	2.35	FY00	2.45
55	1.8	2.55	FY00	2.65
67	2.2	3.15	FY97	2.8

This next table talks about the bow wave in tabular form. Let's take the example of the attack submarine force level of 45 boats. Nominally, a force of that size could be maintained with a long-term average procurement rate of 1.5 boats per year.

But because we will not be getting very many boats during the 1990s, we have already now created a requirement for building slightly more than 2 boats per year to maintain a force of 45 boats.

If you wait longer, the bow wave gets even steeper. And the same thing holds true now for the other attack submarine force levels.



SSN-23 -- not needed for 10 to 12 by 2012

- 2 Seawolf-stealthy boats -- SSN-21 and SSN-22 -- already funded
- 8 to 10 more needed in service by 2012
- 8 to 10 more funded by FY2006

NSSN procurement profiles

98	99	00	01	02	03	04	04	06	Tot
1	0	1	0	1	1	2	1	2	9
1	0	1	0	1	2	1	2	1	9
1	0	1	0	1	2	2	2	2	11

I am going to switch now to the second topic, which are the program-specific issues, starting first of all with the third *Seawolf*, the SSN–23.

The third *Seawolf* would be a militarily useful and valuable submarine, but funding the third *Seawolf* in fiscal year 1996 is not required to meet the JCS goal of having 10 to 12 *Seawolf* level stealthy boats by the year 2012.

Two such boats, the first two *Seawolf*s, have already been funded. And under current plans, we would need to fund another 8 to 10 more by fiscal year 2006.

As you can see in the chart here at the bottom [indicating], the Navy's plan would fund nine to eleven New Attack Submarines by that date, which, together with the first two *Seawolf*s, would be enough to meet the JCS goal.

Senator COHEN. Does that assume there will be a steady construction rate of the attack submarines?

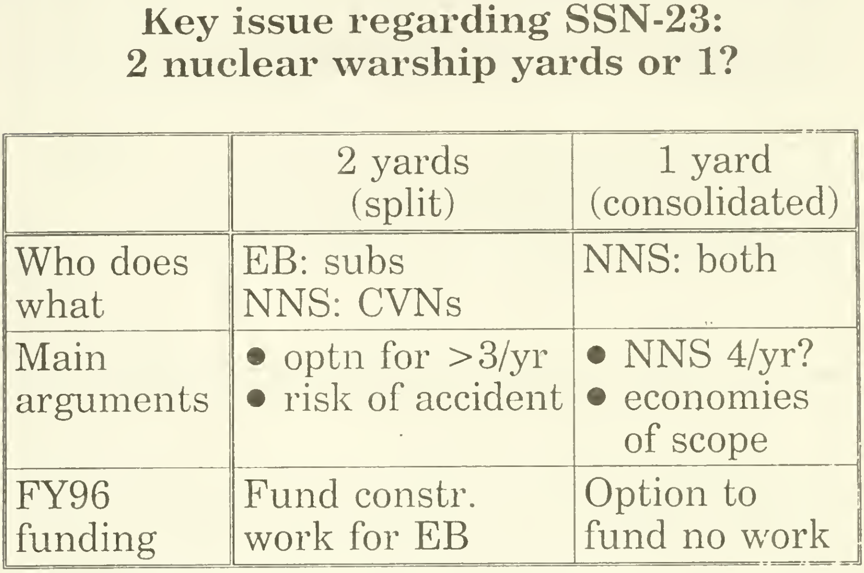
Mr. O'ROURKE. It will work for a steady construction rate in the outyears of either two boats per year or even just one and a half boats per year.

Senator COHEN. What about half a boat a year?

Mr. O'ROURKE. At half a boat per year, you will fall short of the requirement. If you put the chart back up over here, it will help to illustrate the principle.

Senator COHEN. What I want you to address is how the bow wave fits with that projection of meeting the JCS requirement if in fact at the turn of the century, we are required to go up to, let's say, $18 billion a year Shipbuilding and Conversion, Navy (SCN) account.

Mr. O'ROURKE. If you are procuring submarines that will meet the bow wave requirement, you will exceed the procurement plan shown on the bottom line of this table. But even if you only do the two per year rate, you will have more than enough to meet the JCS goal.



Key issue regarding SSN-23: 2 nuclear warship yards or 1?

	2 yards (split)	1 yard (consolidated)
Who does what	EB: subs NNS: CVNs	NNS: both
Main arguments	• optn for >3/yr • risk of accident	• NNS 4/yr? • economies of scope
FY96 funding	Fund constr. work for EB	Option to fund no work

Congress this year faces a major issue regarding the industrial arrangement that the United States should have in the future for acquisition of nuclear-powered warships. Two main alternatives have been discussed.

One of those is the two-yard or split arrangement, which is the administration's preferred strategy, under which Electric Boat builds the subs and Newport News builds the carriers.

The main arguments in favor of the two-yard strategy are first, a second yard, Newport News, could be brought back into submarine production, if necessary, to maintain a combined submarine production rate of more than three boats per year.

Another argument is that having a second yard mitigates against the risk of an accident or a natural disaster of some kind closing down one of the two yards.

The principal fiscal 1996 funding implication of a two yard strategy is that some kind of submarine construction will have to be funded for Electric Boat to avoid a shutdown and restart scenario at Electric Boat

Senator COHEN. How much? When you say "some kind of funding," what does that mean?

Mr. O'ROURKE. Actually, I will be getting to that at a later point in my briefing, and I hope to elucidate that.

The alternative is the one-yard or consolidated strategy under which Newport News will build submarines and carriers. Arguments in favor of that strategy are, first, Newport News has the capacity currently to build four submarines per year, and second, that consolidating operations at one yard will achieve economies in scope that can result in savings for the government.

The principle fiscal 1996 funding implication of the one-yard strategy is that it would give Congress the option not to fund any submarine construction work in fiscal 1996.

If 2 yards -- 4 potential bridging options for EB

- Build SSN-23
- Build portion (back end) of SSN-23
- Build SSN-688 hull sections for backfit
- Build 1 or 2 688Is

- Only first option provides Seawolf-stealthy boat (though not necessary for JCS goal)

- Middle two options could be less expensive, but feasibility, cost-effectiveness not clear

This gets to the question that you were asking earlier. If the two yard solution is chosen, then there are at least four options that are available for providing some amount of submarine construction work to Electric Boat.

One of those is the administration option of building the third *Seawolf*. Another would be to build only a portion of the third *Seawolf*, such as the back end, into which the already funded nuclear propulsion plant could be installed.

A third option would be to build fully outfitted 688 class hull sections that could be backfitted into existing 688 class submarines to create lengthened, expanded-capability versions of those boats. And the fourth would be to build one or two additional 688s.

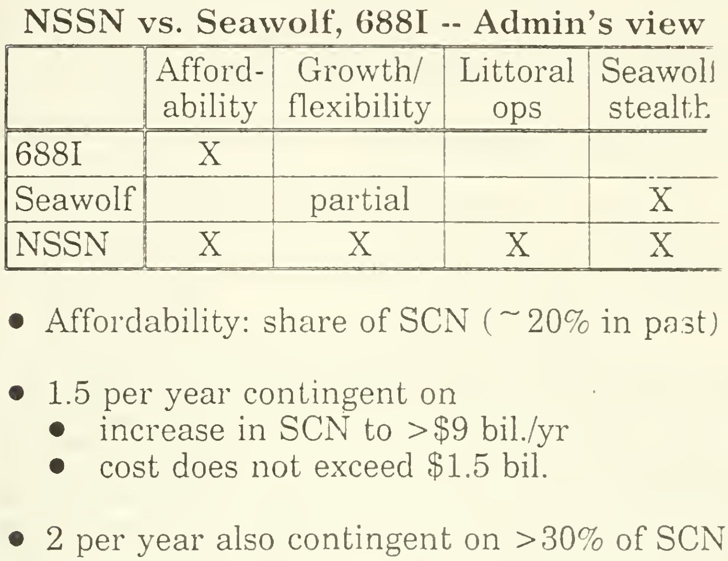
All of these options would provide submarine construction work to Electric Boat, though in varying degrees. None of these options would sustain the submarine design base. That base is instead being sustained by the New Attack Submarine program.

Only the first option of building the third *Seawolf* would provide a *Seawolf*-level-stealthy boat, although as was mentioned earlier, that is not necessary to meet the JCS goal.

The second and third options might be less expensive than the first, but it is not clear that they would be more cost effective than the first. And it is not clear that the third option, the outfitted 688 hull sections, is feasible from the design standpoint, given the timing involved.

Senator **Cohen**. Capability, if you are worried about the 688 being outclassed by a new submarine coming from—be it Russia——

Mr. **O'Rourke**. The 688s, once you installed those hull sections, would be no quieter than they are today. What you would be doing is giving those 688s the ability to perform missions during their currently projected lifetime that they cannot now perform, such as expanded cruise missile, expanded mining or expanded special operations forces insertion.



NSSN vs. Seawolf, 688I -- Admin's view

	Affordability	Growth/ flexibility	Littoral ops	Seawolf stealth
688I	X			
Seawolf		partial		X
NSSN	X	X	X	X

- Affordability: share of SCN (~20% in past)
- 1.5 per year contingent on
  - increase in SCN to >$9 bil./yr
  - cost does not exceed $1.5 bil.
- 2 per year also contingent on >30% of SCN

I want to turn now to the New Attack Submarine program. The table at the top of this chart summarizes the administration's view as to why they believe the New Attack Submarine design is preferable either to the 688 or *Seawolf* designs as the kind of submarine we should be building in the future.

One issue for Congress is the affordability of the New Attack Submarine design. That issue was addressed in a report that CRS put out last year.

And essentially that CRS report concluded that the New Attack Submarine would be affordable at a rate of one-and-a-half to two boats per year if certain conditions were met but that if these conditions are not met, the program could begin to place pressure on the rest of the shipbuilding budget.

Competition in procurement of NSSNs

- Dual-source when rate reaches 2 per year?
  - Feasibility, cost-effectiveness open to question due to low production rate
- Alternative: winner-take all competition for FY98 NSSN and all subsequent NSSNs
  - Leverage for government
  - 2 yards vs. 1 decided by competition
  - Ensuring level playing field

Earlier this year, when the Navy was asked about the idea of applying competition to the New Attack Submarine, the Navy answered that competition would not be feasible in the early stages of the program, because the procurement rate is simply not high enough to support a viable competition between two yards, but that it might be feasible to have competition later on when the program reaches its hoped-for rate of two boats per year, in which case the Navy said you could have competition for purposes of dual-sourcing. But the feasibility and cost-effectiveness of this particular option is open to question.

If competition is to be applied to the New Attack Submarine program, an alternative way of doing it would be to apply it up front, at the start of the program, and have it be a winner-take-all competition for all the boats in the program.

That has the prospect of providing significant leverage for the Government. It would, however, mean that the issue of whether we will have two-yard for one-yard strategy will be decided not by an act of deliberate of policy decision, but instead it would simply be an incidental outcome of the competition.

And if a competition like this is to be staged, certain steps would have to be taken to ensure a level playing field. For example, SSN–23 or some other form of submarine construction work would have to be funded for Electric Boat to make sure that Electric Boat was a healthy competitor in fiscal 1998.

Conversely, Newport News would have to be brought back in as an observer and a consultant for the New Attack Submarine design process so that Newport News would have an understanding of the New Attack Submarine design that was equal to Electric Boat's.

Senator COHEN. But one yard needs money and work and the other yard needs access.

Mr. O'ROURKE. And there is at least one other thing that would be required, which is that features which may now be incorporated into the New Attack Submarine design so as to optimize that design for the specific production processes methods at Electric Boat would have to be taken out of that design, and the design in essence would have to be de-optimized and turned into a vanilla design so that it did not offer built-in cost advantages to either Electric Boat or Newport News.

Senator COHEN. What does that do to the cost?

Mr. O'ROURKE. That is the cost that the Navy has estimated for reworking the New Attack Submarine design. They estimate that cost to be anywhere between $180 million to $235 million.

When the Navy refers to that cost, my understanding from asking the Navy that question yesterday, is that they are talking about the cost of changing the optimized design back into a vanilla design.

Senator WARNER. What does vanilla mean in terms of its usefulness to complete? Is it less useful?

Mr. O'ROURKE. No, it only means that the design does not have any features that have been built into it which might be more optimal for the specific production methods and processes at one yard versus the other.

It has to do with the way, just to pick notional examples, of the way pipe is bent and the way systems are installed.

The broad process of building submarines at the two yards is very similar. But at the micro level there could be lots of little differences, which can be reflected in the design of the ship.

Senator COHEN. So you have to take those out.

Mr. O'ROURKE. That is right. And that is the cost in terms of both money and time that the Navy is referring to when they talk about what would happen when they reengineer the design of the ship.

Senator COHEN. Does that not also include lost investment in terms of the design work being done by Electric Boat?

Mr. O'ROURKE. The work that you would be doing in taking the features out of the design would be in effect paying to take out work that you had already put into the design.

Also the design you wind up with is a vanilla design and probably something that would be somewhat more expensive for either yard to build because it did not contain features that were optimized for one yard or the other.

Senator WARNER. But you have to go to vanilla if you ever have competition.

Mr. O'ROURKE. That is what I am saying, it is one of the steps that you would want to think about——

Senator WARNER. It is a question of when you go to vanilla then, if you are going to have competition. If you are going to have a competition, it is just a question of when you go to vanilla.

Mr. O'ROURKE. If you want to stage a competition up front and have it be a winner-take-all competition, and if you wanted to ensure a level playing field, and if Newport News felt that these features in the design of the boat were important to ensuring a level playing field, then you would want to look at the option of taking those design features out of the boat.

Senator COHEN. Assuming you do not do it up front but you do it theoretically on the back end, does the same rule apply, that you then have to go from a chocolate to a vanilla?

Mr. O'ROURKE. I am not sure I understand your question.

Senator COHEN. In other words, you are assuming that you want to put the competition up front. In order to do that you would have to take out those design features we currently have invested *X*-millions of dollars in, take those out to make it as bland or nonspecific, non-yard specific as possible, right?

Now, assuming you do not make that choice but rather you pursue the Navy's recommendation that we have the lead design yard do the lead ship and theoretically allow Newport News, if it could do so, to come in at a later time, what Senator Warner is asking, would you have to do the same thing at that point or would Newport News be allowed into the specific design that has been developed by Electric Boat at that point?

Mr. O'ROURKE. In theory you could do it either way. And, also, Newport News has the option of changing some of its production methods and processes to accommodate the features in the design that are currently now——

Senator COHEN. In other words, theoretically, if I were Newport News and were precluded from getting in up front on the up-front competition, was somehow able to survive, assuming that can be done, until after the first boat, I then take a look at what Electric Boat has done with respect to its design and say, "I can beat that, I can put out the same ship at a more efficient level using my own production methods and not be locked into that design."

Mr. O'ROURKE. If you have a competition later and build the boat to the design that will come out of the Navy's currently planned process, there may be some cost penalty involved in having Newport News build that design.

Newport News could decide that that is a cost penalty that they are willing to incorporate and absorb themselves.

The other option would be to allow Newport News the option of altering the design in the aspects where those optimization features cause the yard problems that might be significant in terms of opening the competition at a later stage. You could do it either way.

Relative costs of 2 yards vs. 1 -- 2 parts:

- Shorter-term (one-time transitional) costs
- Longer-term (annual recurring) costs

Navy, NNS have different estimates for both

Navy and NNS agree that 1-yard strategy is less expensive in long run, but disagree on how much due in part to difference in annual recurring savings estimates ($FY96):

- Navy: ~$60 million per year
- NNS: ~$230-330 million per year

What is correct figure, how does it compare with value of 2nd yard for surge, risk mitigation, etc?

And finally, to finish up on the question of the industrial base issue, if you go to the one-yard solution rather than to the administration's option of a two-yard solution, that will have cost effects both in the shorter term and in the longer term.

The shorter-term cost effects are the one-time transitional costs associated with shutting down Electric Boat and transitioning the New Attack Submarine program from Electric Boat down to Newport News.

The longer-term or annual recurring cost effects are the annual recurring savings that are intrinsic to the notion of maintaining activities in only one yard versus two. The Navy and Newport News have different estimates for both the shorter-term cost effects and the longer-term annual recurring cost effects.

The Navy and Newport News agrees that the one-yard strategy is less expensive in the long term than the two-yard strategy, but they disagree on how much less expensive the one-yard strategy is in part because of the difference that they have on the long-term annual recurring savings that are intrinsic in operating one yard versus two.

The Navy estimates, for the scenario that it considers to be the most realistic, that the annual recurring savings is on the order of about $60 million per year; whereas, Newport News estimates that those annual recurring savings are on the order of about $230 million to $330 million per year. And this is in fiscal 1996 dollars.

I could talk a little bit more about these figures later if you would like.

Senator ROBB. Mr. Chairman, excuse me just one minute.

Are you going to go into some detail a little? It seems to me that would be one of the valuable perspectives that you would bring in terms of which estimate makes more sense and why.

Mr. O'ROURKE. I am prepared to talk about that. To keep the length of my presentation down I designed the presentation to flag that issue for you and I can come back to that later in the question and answer session. But I was facing a time limit in the presentation.

Senator COHEN. Why do you not just give us a thumbnail sketch as you pass through it?

Mr. O'ROURKE. Basically the Navy's annual savings figure is primarily related to the avoidance of duplicative fixed costs at the second shipyard, although it also has aspects of the interaction of wages, hours and material costs.

Newport News's savings, which are considerably higher, appear, to my knowledge, to result from two different sources.

One is the avoidance of fixed duplicative costs at the second shipyard, and in that sense the portion of the savings that is due to that is actually very comparable to the Navy's estimate.

I do not believe that Newport News has overestimated the fixed overhead costs at the second yard.

But Newport News appears to have a second source of savings. As I am able to break it down and look at the numbers, it goes beyond the classic notion of avoiding fixed costs at the second facility.

And that is that Newport News appears to believe that it can build submarines intrinsically less expensively than the other yard independent of the kinds of economies that you get from consolidating two facilities down to one.

Now if you believe that that is the case, then you would want to add that additional savings, which would bring it closer to the figure that you see here for Newport News.

If, however, you believe that the only savings that will be realized through this process are the classic savings of consolidation associated with moving to one facility, then the annual recurring savings figure, as I am able to analyze it, will be closer to the Navy's figure. Again, within in the Newport News estimate is a lower figure that is due only to the savings of fixed overhead costs of the second yard, which is actually very similar to the Navy's estimate.

The Navy's figure is for one scenario only. There are other scenarios, and they can go as high as $130 million. The Newport News figure is actually not too different than that.

So what you are left with is the notion that we can in the very broadest sense, in rough order of magnitude, possibly save a minimum of $100 million per year in costs.

These estimated cost saving, are very notional because we are looking far out into the future, and there is a lot of uncertainty.

That is how I have been able to break down the difference in the two costs.

Senator ROBB. Let me just ask, are the costs that are being referred to here the kind of costs that are appropriate for inclusion in a cost base or not? If they are not appropriate, then we should not consider it.

If they are, then it seems to me it is a part of the legitimate savings that a company would make in establishing a bid.

Mr. O'ROURKE. Right. If you wanted to study only the savings associated with consolidation and to understand the effects of that, then I would tend to focus more on the savings that are associated with avoiding the fixed costs of the second yard and also some economies that are due to acquiring materials for two different programs. Newport News has an estimate for that. And on the face of it, it does not appear to me that the Newport News estimate for that is unreasonable.

Senator ROBB. Basically——

Mr. O'ROURKE. However, if you wanted to say what are the overall savings differences, or what is the overall savings in cost to the government of going one path versus the other, whether it is due to consolidation or not, then you would want to examine the issue of whether Newport News can in fact produce submarines for intrinsically somewhat less cost than Electric Boat

It depends on your perspective, whether you want to include the second form of savings.

Senator COHEN. But you have not given us any guidelines to do that. You said if you believe the Newport News analysis, then you will come out with roughly this figure. If you believe in the Navy, you will come out with this figure.

It is the same position I think that all of us are in with respect to if you have a tax cut will that have a dynamic impact on the economy and stimulate the economy more or will it be static analysis. I mean, we are basically in the same position, are we not?

Mr. O'ROURKE. Whether the second source of savings for Newport News is reasonable, that is an issue that I was not able to test without access to the comparative historical proprietary data that I have asked the Navy to supply to me. That is the information that Nora Slatkin testified earlier she is trying to get to me, but I have not received it yet, so I have not been in a position yet——

Senator ROBB. From whom do you not have the information that you need to make that judgment?

Mr. O'ROURKE. From the Navy, because I asked for comparative information from both of the shipyards. The Navy——

Senator ROBB. Has the Navy indicated they will not or they have not yet supplied that information?

Mr. O'ROURKE. The Navy has told me they are trying to get it to me, that it requires the permission of both of the shipyards, that they do in fact have the data from both shipyards but that they are now working—this is what they told me yesterday—they are working to make sure that the information is apples and apples.

The information came from both of the shipyards, and they apparently came in somewhat different——

Senator ROBB. How soon do you think you might have that information?

Mr. O'ROURKE. I am hoping it will be just a matter of a couple of days. At that point I will be in a better position to test the second potential source of savings in Newport News's submission. But I cannot do that now.

Senator ROBB. Mr. Chairman, could we just ask that he add——

Senator COHEN. As soon as you get the information, obviously we will want to have access to it. We will probably have to have at least one or two more hearings in any event before this over.

[The information follows:]

[CRS has not yet received the data required to evaluate this portion of Newport News Shipbuilding's cost study. When CRS receives the data, the evaluation will be carried out and the results will be forwarded to the committee.]

Senator COHEN. So why do you not complete your presentation?

Mr. O'ROURKE. I only had one final point, which is that an issue for Congress is to decide what is the accurate figure—is it closer to the Navy's number or closer to Newport News's number—and how does that figure, whatever it may be, compare to the value of having the second yard for purposes of surge production and risk mitigation?

That completes my statement. I will be happy to answer any other questions that arise.

Senator WARNER. What do you mean surge production? You heard the witness for Newport News say, "We are out of the submarine business."

How do they surge?

Mr. O'ROURKE. The value of having the second yard is that you can in fact reconstitute production at Newport News, if you go through a process that involves time and cost to bring them back into the business.

Senator WARNER. Big time and big dollars, right?

Mr. O'ROURKE. Depending on when it is you want to bring them back in. The longer you wait, the greater the time and the effort and the cost to reconstitute Newport News as a second submarine producer.

Senator COHEN. You can get into the et cetera when the question and answer period begins. Thank you very much, Mr. O'Rourke.

[The prepared statement of Mr. O'Rourke follows:]

NOT FOR PUBLICATION
UNTIL RELEASED BY
SENATE ARMED SERVICES COMMITTEE

STATEMENT OF

RONALD O'ROURKE
SPECIALIST IN NATIONAL DEFENSE
CONGRESSIONAL RESEARCH SERVICE

BEFORE THE
SENATE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON SEAPOWER
HEARING ON
SUBMARINE ACQUISITION ISSUES
MAY 16, 1995

NOT FOR PUBLICATION
UNTIL RELEASED BY
SENATE ARMED SERVICES COMMITTEE

Mr. Chairman, distinguished members of the subcommittee, thank you for the opportunity to appear before you to discuss issues relating to the Administration's proposed plans for submarine acquisition.

As requested, the first section of my testimony addresses the general issue of future requirements and building rates for attack submarines. The following two sections discuss the two specific submarine-acquisition issues facing Congress this year:

- First, what should be the near-term, stop-gap measure for maintaining (i.e., "bridging") the submarine construction industrial base until the start of a follow-on submarine acquisition program? This is the issue of whether to fund SSN-23, a third Seawolf (SSN-21) class submarine, at a cost of about $1.5 billion in FY1996 budget authority.

- Second, what should be the follow-on program that starts at the other end of the "bridge"? This is the issue of whether to approve about $1.16 billion in FY1996 funding to continue work on the New Attack Submarine (NSSN) program. The Administration plans to procure the first NSSN in FY1998, but the FY1996 budget request for the NSSN program includes about $705 million in advanced procurement funding for the first boat.

Congress' decisions on these two issues will affect the future configuration of the submarine construction industrial base and the future of the U.S. attack submarine fleet.

As requested, the final section of my testimony discusses the recent analysis of the relative costs of the "2-yard" vs. "1-yard" strategies for acquisition of nuclear-powered warships that was undertaken as a result of a hearing on submarine acquisition issues before the House National Security Committee subcommittee on Military Procurement on March 16, 1995.

SSN FORCE-LEVEL REQUIREMENT AND PROCUREMENT RATE

Two Competing Requirement Statements -- BUR and JCS

Since September 1993, two separate and somewhat divergent statements of the SSN force-level requirement have been allowed to exist and compete for the attention of policymakers. One is a Joint Chiefs of Staff (JCS) requirement first done in 1992 and updated in mid-1993. It calls for a force of 51 to 67 SSNs, including 10 to 12 boats with Seawolf-level stealth by the year 2012. The other is the September 1993 Bottom-Up Review (BUR) force-level goal of 45 to 55 SSNs.

In theory, the BUR force-level goal of 45 to 55 SSNs should be the controlling number -- it came out after the JCS study, and it represented the official position of the Department of Defense. The leadership of the Pentagon, and the civilian leadership of the Department of the Navy, appear to support the BUR number. But the uniformed submarine community, and perhaps to some degree uniformed elements of the Navy outside the submarine community, continue to make reference to the older JCS requirement in their discussions of required SSN force levels. The slides attached to the end of this statement, taken from Navy briefings given to Congressional staffers at different points last year (plus one slide from a Navy-appointed independent NSSN review group), illustrate these continuing references to the higher JCS figures.

The parallel existence of these two separate and somewhat divergent statements of the SSN force-level goal over the last 19 months is a source of ambiguity and possibly some confusion in submarine acquisition planning. This is particularly the case in light of the fact that civilian Navy officials who support the lower BUR requirement are now invoking the need for 10 to 12 SSNs with Seawolf-level stealth, even though this figure is part of the higher JCS requirement.

Eliminating this duality in requirement statements could involve explicitly renouncing the JCS requirement once and for all or revising the BUR requirement upward to the JCS figure.

The fact that the JCS force-level requirement has been cited in discussions of the future SSN force since September 1993 may raise questions about the status of other force-level goals requirements established by the Bottom-Up Review. If a JCS study that predates the BUR can be used to mount an implicit challenge to the BUR force-level requirement for SSNs, are other elements of the U.S. military force structure called for in the BUR also open to challenge?

Insofar as the BUR number tends to be cited by the civilian leadership of the Navy, while the JCS number is the product of the uniformed JCS staff and is cited by uniformed elements in the Navy, the continued reference to the JCS force-level goal might also raise a question concerning civil-military relations in the Pentagon.

Lastly, it is important to note that the JCS requirement calls for a force of 10 to 12 SSNs with Seawolf level quieting by the year 2012 -- and *not* 2010, as Navy officials stated at one point earlier this year. The difference between 2010 and 2012 is critical: Funding SSN-23 in FY1996 would be necessary to achieve a force of 10 to 12 boats with Seawolf-level stealth by the year 2010, but it would not be necessary to achieve such a force by 2012.

The JCS study, first done in 1992, may have looked an even 20 years into the future, to the year 2012. The year 2012 might thus be somewhat arbitrary. Threat projections that far into the future, moreover, are unavoidably "fuzzy" to some degree. It is thus reasonable for someone to state, as a matter of personal opinion, that we need 10 to 12 boats with Seawolf level stealth by the year 2010 rather than 2012. But it is equally reasonable on this basis to go two years the other way and state, as a matter of personal opinion, that we don't need to achieve such a force until 2014. And these would only be personal opinions. The JCS requirement is for the year 2012, not 2010. Four of the briefing slides attached at the end of this statement note the 2012 date.

Factors driving the requirement

Roles and Missions of Attack Submarines

As stated in the 1993 CRS report entitled Naval Force-Structure Planning: Breaking Old Habits of Thought, it is an oversimplification, particularly in the post-Cold War era, to think of attack submarines solely or even primarily as platforms for countering adversary submarines:

> During the Cold War, U.S. attack submarines were justified primarily in connection with the need to counter Soviet submarines. As a result, U.S. attack submarines are often thought of primarily as antisubmarine warfare (ASW) platforms, and some have questioned the need for U.S. attack submarines in light of the decline in Russian naval capability.
>
> Attack submarines, however, can perform a variety of missions aside from ASW, including covert surveillance and reconnaissance, covert insertion and extraction of spies and special forces, covert Tomahawk cruise missile strikes, covert mining of harbors and coastal areas, and anti-surface warfare. These missions can be performed either independently, or in support of other U.S. military forces. Even during the Cold War, it was probably an oversimplification to think of attack submarines solely as ASW platforms; they performed covert surveillance and insertion/extraction operations as well. In the post-Cold War era, the Navy has indicated that missions other than ASW will receive increased emphasis. In determining requirements for attack submarines, policymakers arguably should consider not just ASW, but the full range of missions that these platforms can perform.

Requirement for overall numbers

As discussed in the Bottom-Up Review, requirements for an attack submarine force of up to about 45 boats are driven by both warfighting considerations (i.e., fighting two nearly simultaneous major regional contingencies) and peacetime deployment considerations (i.e., maintaining forward deployments of attack submarines for purposes of intelligence and surveillance, and for responding rapidly at the outset of a crisis or conflict).

Requirements for an attack submarine force of more than about 45 boats are driven primarily by peacetime deployment considerations. As discussed in the 1992 CRS report entitled Naval Forward Deployments and the Size of the Navy, when limits on personnel tempo, requirements for maintenance and training, and time lost transiting to and from the operating area are fully taken into account, it takes an average of 5.7 attack submarines to keep one continuously deployed in an operating area somewhere around the periphery of Eurasia.

Navy representatives have stated openly that in recent years, 3 or 4 attack submarines have been forward-deployed to the Mediterranean to meet the needs of the theater CINC responsible for that area. In light of this example, it can be seen how CINC demands for submarine deployments to the Mediterranean, the Western Pacific, the Indian Ocean/Persian Gulf region, and the Arctic could total 10 or more boats, requiring a force of 57 or more attack submarines.

Requirement for Unit Characteristics

In the post-Cold War era, the need for building attack submarines with a certain level of unit capability is driven by both non-Russian and Russian considerations:

- The need for building submarines that can be changed and adapted over time with relative ease to perform missions differently or to perform new missions is tied to the traditional naval planning concern about ensuring the continuing usefulness of a major weapon platform that will remain in service over a period of 30 years. This concern that has been reinforced by the uncertainties regarding the development of the international security environment in the post-Cold War era.

- The need for submarines with features for operating in littoral (near-shore) areas is tied to the Navy's post-Cold War emphasis on preventing and containing non-Russian-oriented regional crises and on participating along with other U.S. forces in joint operations in major regional contingencies.

- The need for having some number of attack submarines with Seawolf-level stealth appears to be tied primarily to the need to avoid Russian submarine detection systems and to counter quiet Russian submarines such as the Akula II class and the successor class known as the P-IX (Papa Nine). Seawolf-level stealth, however, might also have some value in certain future non-Russian-oriented regional operations as well.

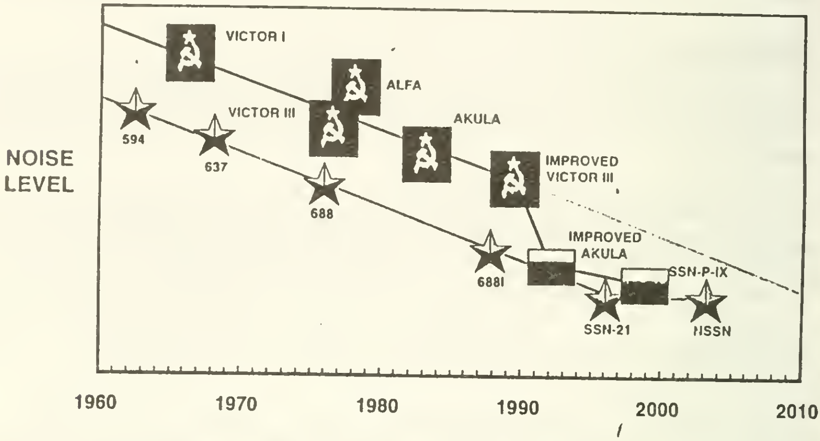
The charts on the next two pages are Navy representations of how the Russians now have, for the first time, a class of SSNs (the Akula IIs) that is quieter than our quietest in-service class of SSNs (the Improved SSN-688s, or 688Is). The charts also illustrate how boats with Seawolf-level-stealth (the Seawolf and New Attack Submarine designs) are projected to recover a narrow margin of quieting superiority for the U.S. attack submarine fleet.

Importance of Quieting

In terms of assessing a submarine's ability to prevail in a fight against another submarine, there are several factors that can be considered, including ship characteristics such as speed, maneuverability, and maximum depth. The overall superiority of the best U.S. SSNs over the best Russian SSNs has traditionally been based on four other factors in which U.S. SSNs have historically had an advantage.

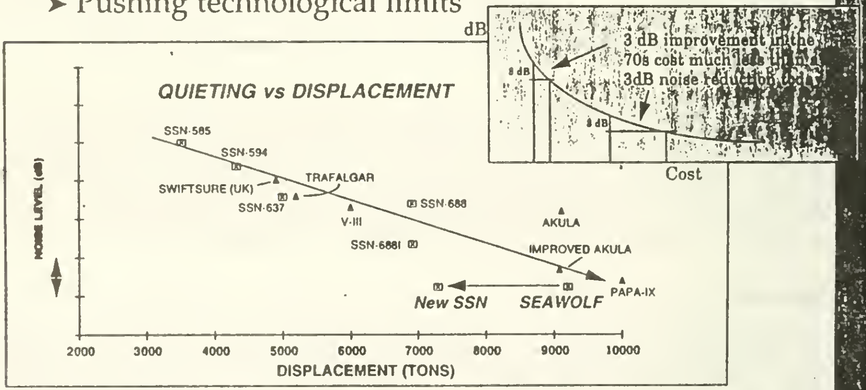
One of these is quieting -- the amount of noise the submarine makes relative to the amount of noise the other submarine makes.

Preserving Warfighting Superiority



New SSN Quieting- Revolutionary

- The *cost* of reducing acoustic signature
  - ➤ Pushing technological limits



3 dB improvement in the 70s cost much less than a 3dB noise reduction today

  - ➤ *Breakthrough*- SEAWOLF quieting in a smaller hull

A second is combat system sophistication -- the ability of the sonars and associated computers on the submarine to detect the noise made by the other submarine, relative to the ability of the sonars and associated computers on the other submarine to do likewise. Together, quieting and combat system sophistication determine which submarine will be the first to detect, localize, and develop a firing solution on the other submarine, and at what range, and at what risk of counterdetection.

A third factor is weapon quality, which includes the sophistication of the guidance package in the front end of the torpedo.

A fourth is crew quality, which is a function of recruiting, training and teamwork.

All factors considered, 688Is are probably more capable than Akula IIs. But the foundation of superiority that the best in-service U.S. SSN has over the best in-service Russian SSN has narrowed, because it no longer includes quieting. The Navy projects that quieting advantage will be recovered with the commissioning of Seawolf-level-stealthy SSNs, but as noted earlier, the recovered margin of quieting superiority is projected to be quite small. Under some circumstances, in fact, such a narrow margin in radiated noise could prove irrelevant.

Of the three other pillars of superiority, two of them -- combat system and weapon quality -- are dependent in part on computer hardware and software. Restrictions on exports of higher-capability computer technology have been relaxed in recent years, and Russia has mathematicians capable of designing sophisticated software algorithms. Consequently, the U.S. margin of superiority in these two areas could also narrow in the years ahead.

Russian submarine production

There appears to be little disagreement about the capability of the submarines that the Russians are now building. The debate centers more on the rate at which the Russians will build them. During the latter years of the Cold War, the Soviets built about 8 submarines per year of all kinds -- about 4 nuclear-powered units, and about 4 non-nuclear powered units, some of which were exported to client states. In 1991, the head of the Soviet Navy told visiting U.S. Navy officials that in the future, the plan was to build 3.5 submarines per year -- 1.5 nuclear-powered boats and 2 non-nuclear-powered boats, of which 1 would be offered for export.

The question is whether the Russians will be able to maintain a building rate of 1.5 nuclear-powered units per year, or whether economic and social conditions will limit production to some lower rate, such as 1 per year or 0.5 per year.

Why are the Russians engaged in a fairly determined effort to design and build new-generation submarines when the other parts of their military, and their economy and society as a whole, are undergoing stress and may even be in various states of collapse? Why has submarine production, in other words, been singled out as such a high-priority activity?

There are at least three possible explanations, all of which could be involved. The first has to do with Russia's status as a major world power. At present, perhaps the one thing maintaining Russia's status as a major world power is its substantial force of long-range nuclear weapons. As a result of arms control agreements, Russian ballistic missile submarines in the future will account for a much larger share of Russia's long-range nuclear missile warhead inventory than has been the case in the past. The Soviet Navy, now the Russian Navy, traditionally has used attack submarines to help protect its ballistic missile submarines from possible wartime attack by enemy submarines. Thus, the Russians may view attack submarines as increasingly important to maintaining Russia's status as a major world power.

A second potential explanation has to do with the possibility of a reconstitution of Russian conventional military capability 10 to 20 years from now. Given the long time needed to build submarines, particularly nuclear-powered submarines, an effort on the part of Russia to reconstitute itself as a major world conventional military power 10 to 20 years from now might have to begin today with production of nuclear-powered submarines. Submarine production, in other words, may be the "long pole in the tent" of an effort to reconstitute Russia's conventional military power.

A third possible reason is that these submarines are being built as a jobs program -- to maintain social tranquility in the communities that build them. Construction of Russian nuclear-powered submarines is being consolidated at Severodvinsk on the White Sea. The submarine yard there is reportedly the area's largest employer, employing about one-quarter of Severodvinsk's population of 250,000. Building submarines may be viewed as less risky than attempting to convert this large work force to alternate forms of employment.

With regard to potential alternate forms of employment, Russia currently has a shortage of adequate housing for its military personnel. The submarines Russia is now building each require about 10 million worker-hours (5,000 worker-years) of labor to build -- about the same as a U.S. submarine. According to information provided by the National Association of Home Builders, this amount of labor would be sufficient, in the United States, to build about 11,000 apartment-style living units of about 900-square feet each (i.e., two-bedroom apartments) to U.S. building standards. (Measured another way, submarines like the Akula II, if built in the United States, would each cost about as much as an SSN-688 -- about $1.4 billion.)

It can also be noted that Russia is devoting significant and scarce resources to building new submarines at a time when scores of Russian submarines decommissioned in the last few years are tied up at pier awaiting shipyard defueling, dismantlement, and disposal work.

SSN Procurement Rate

A question frequently asked in discussions of U.S. submarine acquisition is whether there can or should be a hiatus in submarine procurement for some number of years. This question is to a large degree moot, because we are already programmed to have a decade-long near-hiatus in submarine procurement during the 1990s. If Administration plans are carried out, then during the decade of the 1990s (FY1990-FY1999), we will procure only 4 attack submarines. These are the last SSN-688 submarine in FY1990, the second Seawolf submarine (SSN-22) in FY1991, the third Seawolf submarine (SSN-23) in FY1996, and the first New Attack Submarine in FY1998. This works out to an average procurement rate of 0.4 boats per year for a period of ten years -- a near-hiatus of considerable length.

The near-hiatus in SSN procurement during the 1990s is an important factor to consider in assessing required future procurement rates. The challenge in maintaining overall numbers of SSNs is not in the short-term or the mid-term. The SSN-688s and the first two Seawolf submarines are sufficient to maintain a force of 60 or more boats out to the year 2007, without any additional procurement. The problem, rather, begins in the longer term, after 2020, when the 688 force, funded mostly in the 1970s and 1980s, will be mostly gone. This is when the attack submarine force will be composed only of boats funded from about FY1990 onward. It is at this time that the force-level effects of the 1990s near-hiatus in procurement could become manifest.

The long-term average required procurement rate for a given item (sometimes referred to as the steady-state procurement rate) is equal to the required force level divided by the expected service life. As shown in the table on the next page, assuming a 30-year life for SSNs, maintaining a 45-boat force would require a long-term (30-year) average procurement rate of 1.5 boats per year (45 divided by 30 is 1.5).

If the 1990s are considered to be the first 10 years of the 30-year procurement period, and if 4 attack submarines are procured during this decade, then the other 41 boats must be procured in the remaining 20 years of the period. This equates to an average procurement rate of 2.05 boats per year (41 divided by 20 is 2.05). Thus, as a result of the near-hiatus in submarine procurement during the 1990s, a procurement rate of more than 2 boats per year would be required to maintain a force of 45 boats -- the low end of the BUR range -- through the 2020s.

Another way to state this is to say that an average of 15 boats must be procured each 10 years. If 4 attack submarines are procured during the 1990s, then the procurement rate will have fallen 11 boats behind this pace, and maintaining a force of 45 boats will require that these 11 boats be added to the procurement profile for the remaining 20 years of the 30-year procurement period.

The table shows the analogous procurement rates for maintaining a force of 51, 55, or 67 boats through the 2020s following the 1990s near-hiatus in procurement -- 2.35, 2.55, and 3.15 boats per year, respectively.

TABLE 1. SSN FORCE LEVELS AND PROCUREMENT RATES

Force level	Procurement rate to sustain force level through 2020s			
	Steady state rate for 30-year period FY1990-FY2019	Rate after 1990s near-hiatus (FY2000-FY2019)	With extended hiatus (30-year life for all existing SSNs)	
			Procurement hiatus until	Resulting rate
45	1.5	2.05	FY2002*	2.4
51	1.7	2.35	FY2000*	2.45
55	1.8	2.55	FY2000*	2.65
67	2.2	3.15	FY1997**	2.8

Source: Prepared by CRS, March 1995, based on U.S. Navy data. See text for methodology and discussion.

* Assumes 10-year construction period for first submarine procured when procurement resumes.

** Assumes 7-year construction period for first submarine procured when procurement resumes.

Thus, the near-hiatus in submarine procurement of the 1990s has already produced a requirement for an attack submarine procurement bow wave for the period after the turn of the century. As shown in the graph on page 12, unless submarines are procured at an average rate of more than 2 ships per year for the 20-year period starting in FY2000, SSN force levels would fall below the stated minimum required figure of 45 boats.

If submarines now under construction or in operation are kept in service until they reach age 30, then a minimum BUR-sized force of 45 boats can be maintained to the year 2012 without fielding any additional submarines. Assuming a 10-year construction period for the first boat to be procured at the end of a procurement hiatus extending to the year 2000 or beyond, the next submarine would not have to be procured until about FY2002. Extending the submarine procurement hiatus out to FY2002, however, would further increase the procurement rate that would need to be maintained once procurement of submarines resumed.

If the hiatus in submarine procurement were extended to FY2002 (i.e., no submarines are procured during the period FY1996-FY2001), then only 2 attack submarines (the last SSN-688 and SSN-22, funded in FY1990 and FY1991) will have been procured in the first 12 years (FY1990-FY2001) of the 30-year procurement period. Maintaining a 45-boat force through 2020s would then require procurement of 43 boats in the remaining 18 years of the period, or an average procurement rate of about 2.4 boats per year, as shown in the table above.

The table shows the analogous procurement rates for maintaining a force of 51, 55, or 67 boats through the 2020s following an extended hiatus in procurement -- 2.45, 2.65, and 2.8 boats per year, respectively.

In short, except for a 67-boat force, extending the procurement hiatus to the point where submarines must be procured to replace those retiring at age 30 increases the bow-wave effect.

One strategy for addressing the issue of the downstream procurement bow wave is to hope that in the long run -- that is, by the 2020s -- changes in the international security environment or in military technology will reduce the SSN force-level requirement and thus the required procurement rate. Such changes are possible. But it's also possible that changes between now and the 2020s will increase rather than decrease the SSN force-level requirement, making the procurement bow wave even steeper. If the former scenario occurs, the Nation will have avoided substantial submarine procurement costs. If it doesn't, then policymakers at that time will be presented with a substantially greater and possibly unaffordable procurement requirement.

THE "BRIDGE" ISSUE -- FUND SSN-23 IN FY1996?

Sunk Cost on SSN-23

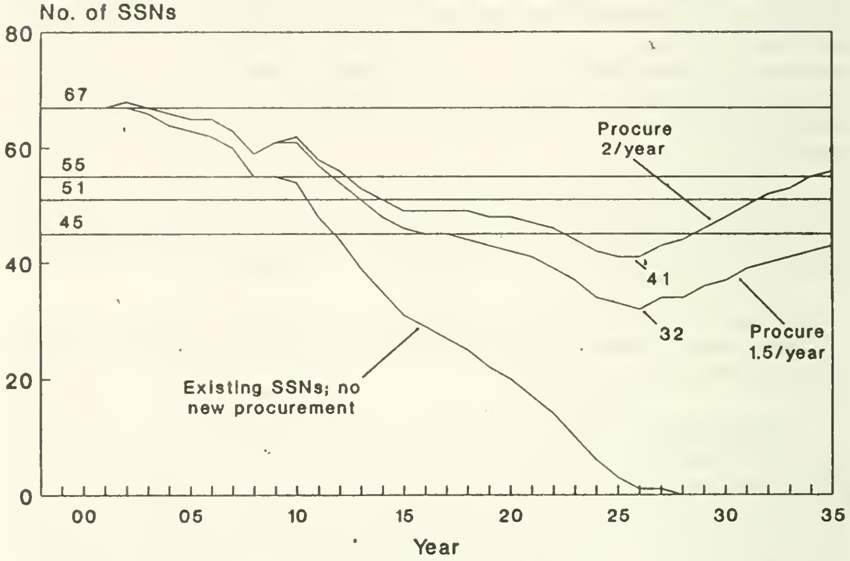
It is sometimes said that the sunk cost to date on SSN-23 is roughly $900 million, and that therefore only another $1.5 billion in additional expenditures are needed to finish the boat, which has a total cost of about $2.4 billion. This statement, which has been made at various times over the past year or so, is not entirely accurate.

About $920 million in prior-year funding is available for obligation toward SSN-23 -- about $380 million in FY1990 and FY1991 advanced procurement funding for SSN-23, and $540.2 million in additional funding that Congress appropriated as part of a 1992 rescission bill.

The $380 million in FY1990-FY1991 funding has been almost completely obligated and expended. Only a portion of the $540.2 million in 1992 funding, however, has been obligated, and only a portion of that has been expended. Of the total of about $920 million available for obligation, as of May 5, 1995, $806 million has been obligated and $438 million had been expended.

SSN force levels

1998-2035, 30-year life



Source: Prepared by CRS, 3/95, based on U.S. Navy data.

In short, although about $1.5 billion in new (i.e., FY1996) budget authority is needed to complete funding for SSN-23, the amount of money that needs to be expended to finish SSN-23 as of early May was about $2 billion ($2.4 billion less $438 million expended).

If Congress decides to not build SSN-23, then most or all of the unexpended funding from the $920 million would probably have to be used to pay for contract termination costs or costs to support certain key submarine component manufacturers. The Navy has told CRS that if Congress does not finalize such a decision until the end of FY1995, then little or none of this funding would be recoverable for other uses.

Primarily An Industrial Base Issue

Funding SSN-23 would add to the U.S. attack submarine fleet a very capable submarine of which the Navy and the Nation could make considerable use for a period of 30 years. Funding SSN-23 would also marginally contribute to the Administration's goal of maintaining an attack submarine force of at least 45 boats, and it would advance the Navy one boat closer to the 1993 JCS goal of having 10 to 12 attack boats with Seawolf-level stealth by 2012.

Funding the SSN-23 in FY1996, however, is not absolutely necessary to achieve the Administration's goal of maintaining a force of at least 45 attack submarines. The absence of SSN-23 from the force structure could be made up by procuring one additional NSSN at some later point.

Nor is funding SSN-23 in FY1996 absolutely necessary to achieve a force that includes 10 to 12 Seawolf-level-stealthy boats by 2012: Two Seawolf-level-quiet boats -- SSN-21 and SSN-22 -- have already been funded, and as shown in the table below, under the Administration's current plans, another 9 to 11 NSSNs (which would be Seawolf-level-quiet boats) would be funded between FY1998 and FY2006 (and would thus be in service by 2012).

TABLE 2. POTENTIAL NSSN PROCUREMENT PROFILES, FY1996-FY2006

98	99	00	01	02	03	04	05	06	Total
1	0	1	0	1	1	2	1	2	9
1	0	1	0	1	2	1	2	1	9
1	0	1	0	1	2	2	2	2	11

Source: Prepared by CRS, based on U.S. Navy data.

Thus, with regard to meeting stated goals for U.S. attack submarine capability, funding SSN-23 in FY1996 would be militarily helpful but is not militarily absolutely necessary. Consequently, the question of whether it is necessary to fund SSN-23 in FY1996 revolves primarily not around military necessity but rather around industrial-base necessity -- whether it represents the best option for maintaining the submarine construction industrial base until the start of a follow-on submarine program.

The Issue: Two Nuclear Construction Yards or One?

Whether it is necessary to fund some kind of submarine construction work in FY1996 depends to a large degree on one's preferred industrial arrangement for building nuclear-powered ships in the years ahead. Two main alternative arrangements have been discussed for building nuclear-powered ships:

- the 2-yard, or split, arrangement, in which the Electric Boat Division (EB) of General Dynamics Corporation builds nuclear-powered submarines and Newport News Shipbuilding (NNS) builds nuclear-powered carriers, and

- the 1-yard, or consolidated, arrangement, in which production of both submarines and carriers is consolidated at NNS.

EB officials and the Navy state that EB, as a shipyard that builds only submarines, cannot maintain its submarine construction capability until FY1998 unless it receives additional submarine construction work in FY1996. Few observers have argued with this statement.

NNS officials have testified that NNS, as a shipyard that builds nuclear-powered aircraft carriers as well as nuclear-powered submarines, can if necessary maintain its submarine construction capability out to the turn of the decade without receiving additional submarine construction work between now and the turn of the decade, if (1) the nuclear-powered aircraft carrier CVN-76 is funded and built at NNS, and (2) NNS receives some submarine overhaul and repair work that would normally go to the naval shipyards. The first of these conditions has been met: CVN-76 was funded in FY1995, and the contract to build it has been awarded to NNS. Fulfilling the second condition would affect the workload for the government-operated naval shipyards.

Thus, a decision to split production of nuclear-powered warships between EB and NNS implies a need for funding some kind of submarine construction work for EB in FY1996, while a decision to consolidate production of nuclear-powered warships at NNS could permit the option of not funding any submarine construction work in FY1996 (provided that some submarine overhaul and repair work were transferred to NNS from the naval shipyards).

The issue, in short, is whether there should be two nuclear construction yards (EB and NNS) or one (NNS only). The Clinton Administration, as part of its Bottom-Up Review of U.S. defense policy, explicitly stated a preference for the 2-yard arrangement. The Bush Administration, by seeking in 1992 to rescind funding for SSN-22 and SSN-23 (the second and third Seawolf-class submarines, funded in FY1991 and FY1992, respectively), and by including funds for the procurement of no other submarines until the first NSSN in FY1998, appeared to express an implicit preference for the 1-yard strategy.

Arguments For Two Yards vs. One

The principal argument in favor of the 2-yard strategy concerns production capacity. Currently, EB and NNS can each build up to 3 submarines per year. The 2-yard strategy thus preserves the option to reconstitute a second submarine construction program (at NNS) to respond to a need to procure submarines at a rate of more than 3 submarines per year. Assuming a 30-year life for submarines, a steady procurement rate of 3 boats per year would be sufficient over the long run to maintain a combined force of 90 ballistic missile and attack submarines.

Current plans call for a combined force of 59 to 81 submarines (14 ballistic missile submarines plus 45 to 67 attack submarines). Assuming a 30-year life for submarines, a force of 59 to 81 boats can be maintained over the long run with a 30-year steady-state production of 2 to 2.7 boats per year. This is less than the 3 boats per year that could be produced by a single yard.

A procurement rate of more than 3 submarines per year, however, might still become necessary, for three reasons.

First, as discussed earlier, the 1990s near-hiatus in submarine procurement has produced a bow wave situation in which maintaining a force of 45 SSNs through the 2020s will require a procurement rate of more than 2 attack submarines per year. If the 14 youngest ballistic missile submarines are replaced on a one-for-one basis when they retire, then a period will come after the turn of the century when there will be an additional requirement for one ballistic missile submarine per year for 14 years. This production would be in addition to any ongoing production of attack submarines. The combined procurement rate of attack and ballistic missile submarines could thus be more than 3 boats per year for several years.

Second, changes in the international security environment or in military technology may create a requirement for rapidly expanding the size of the attack submarine force from a BUR-like level of, say, about 50 boats to the high-end JCS figure of 67 boats. Accomplishing such a buildup in a short period of time could require a procurement rate of 4 or more boats per year for a period of several years.

Third, changes in the international security environment or in military technology could result in an increase in the attack submarine force-level requirement to a number even higher than the high-end JCS figure of 67 boats. Some analysts, for example, have argued that the vulnerability of surface combatants to advanced enemy anti-ship weapons in the early 21st Century could lead to a revised U.S. fleet architecture that relied more heavily on submarines to carry out various missions.

A second argument that has been made in favor of a 2-yard strategy is that it provides some protection against the possibility that nuclear-warship production at one of the two sites might be stopped by some unforseen development, such as a decision by the parent company of one of the shipyards to get out of the nuclear-warship business, a natural disaster, a serious environmental accident, or an intractable dispute between management and the work force. The likelihood of events of this kind is difficult to quantify.

A third argument, put forth by Secretary of Defense Perry in an exchange with Senator John Warner at a hearing before the Senate Armed Services Committee on February 9, 1995 is that the existence of a dormant, alternate submarine construction yard (NNS) enables the government to employ a threat of "implicit competition," as Secretary Perry put it, against the active submarine yard (EB), so "if the yard that's building the nuclear submarines is performing inefficiently or fails, one can transfer the program down to the other yard. . . ."

The implicit competition argument is open to question, for three reasons. First, stopping submarine production program at EB in mid-stream and transferring it to NNS would cause great disruption in the U.S. submarine construction effort. The Defense Department would probably be reluctant to incur the costs associated with this disruption unless production problems at EB were very great indeed.

Second, it could take several years for production problems of this scale to manifest themselves. By that time, NNS might have been out of the submarine-construction business for so long that the time and cost to reestablish a submarine-construction activity at NNS could be viewed as prohibitive.

Third, transferring the submarine-building program to NNS would put EB at direct risk of going out of business. Carrying out the threat to transfer the program to NNS would risk closing out the option of keeping a second submarine yard (now EB) available for purposes of procuring more than 3 submarines per year. Defense Department officials might be reluctant to carry out an implicit threat to transfer the program to NNS for this reason as well, and EB officials would be aware of this.

The principal argument in favor of consolidating nuclear warship construction at NNS is that this may offer some economies of scope in nuclear warship design and construction not possible under the split arrangement. The central argument is that submarines and carriers would bear the fixed costs associated with only one nuclear construction yard (NNS) rather than two (EB and NNS).

NNS and the Navy in recent weeks have testified and otherwise provided information to Congress on the cost impact of choosing the 1-yard strategy. The issue of the relative costs of the 2-yard and 1-yard strategies is discussed further in the final section of this testimony.

With regard to production capacity, NNS officials told CRS in early March that although NNS can currently produce a little more than 3 submarines per year, with the addition of a $5 million dollar crane, the yard's submarine production capacity could be increased to a bit more than 4 boats per year. More recently, NNS officials told CRS that, upon reexamining the issue, they had determined that NNS could produce 4 boats per year even without the $5 million crane.

Alternatively, if NNS's submarine production capacity remains at 3 boats per year, it might be possible to reestablish a second submarine-construction site -- at the EB location, or Ingalls Shipbuilding in Pascagoula, Mississippi (which built nuclear-powered submarines until the early 1970s), or at one of the naval shipyards (which also built nuclear-powered submarines until the early 1970s) -- to respond to a need to build more than 3 submarines per year. But reconstituting a second submarine-construction yard would involve more time, expense, and technical risk than under the Administration's 2-yard strategy. Also, if some unforeseen event shuts down production at NNS, the country would have no other facility capable of continuing production of nuclear-powered warships.

Bridging Options for a 2-Yard Strategy

If a split industrial arrangement -- a 2-yard strategy -- is preferred, and if procurement of the New Attack Submarine is to begin in FY1998, with advanced procurement funding in FY1996, then it appears that some kind of submarine construction work for EB would need to be funded in FY1996. There are at least four potential options for providing such work:

- fund SSN-23 (the Administration's plan)
- fund a portion of SSN-23
- fund construction of outfitted SNN-688 hull sections
- fund 1 or 2 SSN-688 class submarines

Building SSN-23 would contribute toward meeting the JCS goal of having 10 to 12 Seawolf-level-stealthy boats by the year 2012, although as discussed earlier, this goal can be met without funding SSN-23 in FY1996.

The option of funding construction of only a portion of SSN-23 -- such as the aft section, where the already-ordered propulsion plant would be installed -- has not been fully examined in public discussion. Building only a portion of SSN-23 might not preserve a sufficient business base at EB until FY1998, although this could be addressed by transferring some additional submarine overhaul and repair work to EB from the naval shipyards. And building only a portion of SSN-23 would not provide the Navy with a usable submarine. (The aft section might be used as a land-based training or research and development asset, but the Navy has not expressed a need for such an asset.) Building only a portion of SSN-23 could, however, be less expensive than procuring the whole submarine.

In assessing this option, Congress may wish to explore four questions: Would building only a portion of SSN-23 (and possibly transferring some submarine repair and overhaul work to EB) sufficiently maintain a submarine-construction capability at EB until FY1998? If so, would this cost less than funding SSN-23? If so, would the additional funding needed to procure SSN-23 be justified by the fact that this would provide the Navy with an additional submarine? If additional submarine overhaul and repair work is transferred to EB, how would this affect the workload at the naval shipyards?

The third option would involve building new hull sections that would be inserted into existing SSN-688 class submarines as a major shipyard conversion. The most likely approach would be to cut each SSN-688 in half forward of the reactor compartment, insert the newly built hull section, and then put the submarine back together in its new, lengthened form. The inserted section could be designed to carry additional cruise missiles, mines, special operations forces, or some other desired payload. The feasibility and costs of this option have not been explored. If technically feasible, this option might not be ready to implement soon enough to help maintain EB between FY1996 and FY1998. The cost might be a few hundred million dollars per boat. This option would provide the Navy with a few special-mission SSN-688s with expanded capabilities in certain areas. It would not, however, provide the Navy with any additional Seawolf-level-stealthy boats.

With regard to the fourth option, procuring a single 688I (which could cost $1.4 billion in FY1996 budget authority, less any unexpended funding from the $540 million provided in the 1992 Seawolf rescission bill that could be reprogrammed from the SSN-23 account) could be less expensive than completing the funding for SSN-23.

The Navy has argued, however, that a single 688I would not provide enough work to maintain EB's submarine-construction capability until the start of NSSN procurement in FY1998; the Navy has said two 688Is would be needed. A second 688I would require another $1.4 billion in new budget authority, bringing the total amount of new budget authority for a 688I-based strategy to a figure greater than the cost of new budget authority required for SSN-23.

SSN-23 would be much more capable than an additional 688I and would contribute to the Joint Staff goal of having 10 to 12 boats with Seawolf-level quieting by 2012, whereas additional 688Is would not. The Navy also argues that since it plans to incorporate mainly Seawolf technology rather than older 688I technology into the NSSN design, procuring SSN-23 could preserve the NSSN technological base better than procuring one or two additional 688Is.

In assessing this issue, Congress may wish to explore three questions: Would a single 688I provide enough work to maintain EB's submarine-construction capability until the start of NSSN procurement? If not, could a sufficient amount of work be provided by adding something less than a second additional 688I, and would this cost less than procuring SSN-23? How militarily useful would 1 or 2 upgraded 688Is be compared to SSN-23?

If the start of New Attack Submarine procurement is deferred beyond FY1998, the industrial base bridge for EB would have to be lengthened. For example, in addition to procuring SSN-23 or one or two additional SSN-688s in FY1996, additional Seawolf or SSN-688 class submarines might have to be procured in later years.

Bridging Options for a 1-Yard Strategy

If a consolidated industrial arrangement at NNS -- a 1-yard strategy -- is preferred, and if procurement of the New Attack Submarine is to begin in FY1998, then, as discussed earlier, policymakers have the option of not funding any submarine construction work in FY1996. As discussed earlier, this option may require the transfer of some submarine overhaul and repair work to NNS from the naval shipyards.

If the start of New Attack Submarine procurement is deferred much past the turn of the century, then NNS might have to be provided with some kind of interim submarine construction work.

THE FOLLOW-ON ISSUE: APPROVE FY1996 NSSN FUNDING?

NSSN vs. 688I and Seawolf

The Navy's goal for the New Attack Submarine (NSSN) program is to develop a multimission SSN that is (1) substantially less expensive than the Seawolf design, (2) capable enough to maintain U.S. undersea superiority against a reduced but still-continuing Russian submarine development and construction effort, (3) more capable than the Seawolf or 688I designs for operations in littoral (near-shore) areas, and (4) better able than the Seawolf or 688I designs to incorporate major new submarine technologies when they become available.

As envisioned by the Navy, the NSSN would be as quiet as the Seawolf, would have a submerged displacement of about 7,500 tons, and would be armed with a total of 38 weapons (including 12 additional Tomahawk cruise missiles in a 12-cell VLS). Compared to the 688I and Seawolf designs, the NSSN design would have improved features for operations in littoral waters, including better shallow-water maneuverability, a sail with a reduced radar cross section, and a better capability for covertly delivering special operations forces. The Navy estimates the procurement cost for follow-on NSSNs to be about $1.5 billion in FY1998 dollars, compared to $2.1 billion for additional Seawolf submarines or $1.4 billion for additional 688Is.

The NSSN design is also intended to be more flexible and adaptable than the 688I or Seawolf designs. The NSSN would feature a torpedo room that can be used as a reconfigurable internal space for carrying specialized mission packages. In addition, the NSSN would be designed so that follow-on NSSN units can easily be built with new and different hull sections. This latter feature, which is called modular reconfigurability, would permit the baseline

NSSN design to accommodate major new technologies when they become available and facilitate the construction of altered versions of the NSSN design that might better meet the emerging requirements of the evolving post-Cold War era.

The Administration's position is that neither the 688I nor Seawolf designs are suitable for the post-Cold War era. The 688I design, the Administration argues, lacks Seawolf-level stealth and was not designed with littoral operations in mind. In addition, the Administration argues, the 688I's flexibility and adaptability are very limited because the 688I design has almost no available weight or space for additional equipment, does not have a torpedo room that can be used as a reconfigurable space for specialized missions, and does not have modular reconfigurability to facilitate large-scale, modular insertions of new technologies that may become available in future years.

The Seawolf design, the Administration agues, does have Seawolf-level stealth as well as space and weight for additional equipment, but it is too expensive, was not designed with littoral operations in mind, does not have a reconfigurable torpedo room, and lacks modular reconfigurability. The table below summarizes the Administration's comparison of the 688I, Seawolf, and NSSN designs.

TABLE 3. SUBMARINE CHARACTERISTICS: THE ADMINISTRATION'S POSITION

	Cost	Quieting	Littoral features	Growth/flexibility/adaptability		
				Growth margin	Reconfigurable torpedo room	Modular reconfigurability
688I	X					
Seawolf		X		X		
NSSN	X	X	X	X	X	X

X = Satisfactory in the Administration's view.

In assessing the need to switch to a new design, Congress may consider whether the factors in the above table are important considerations and, if so, whether the scores shown for the 688I and SSN-21 designs on these factors are correct.

NSSN Affordability

As discussed in the 1994 CRS report, Navy New Attack Submarine (NSSN) Program: Is It Affordable?, a key measure of the affordability of the NSSN program is the share of the Navy's shipbuilding budget that would be required for NSSN procurement. This share will depend on the size of the shipbuilding budget, the NSSN procurement rate, and the NSSN's unit procurement cost.

Under the recapitalization plan it presented to Congress last year, the Navy stated that it wanted to increase the shipbuilding budget (the Shipbuilding and Conversion, Navy [SCN] appropriation account) from its current level to about $9.4 billion in FY1998 dollars by the turn of the century. The submarine community would like to procure the NSSN at a rate of two per year starting around FY2003; Navy testimony on its long-range plan suggested a budgeted rate of 1.5 boats per year.

The Navy last year estimated the unit procurement cost for follow-on boats in the NSSN class (defined last year as the average for boats 2 through 30 in a notional 30-ship buy) to be $1.54 billion each in FY1998 dollars. The Navy subsequently redefined "follow-on boats" to mean the fifth boat in the class. Under this new definition, the Navy reported to Congress in March, the estimated cost is $1.55 billion in FY1995 dollars. This figure is about 9 percent higher than last year's estimated cost of $1.54 billion in FY1998 dollars. This does not mean that the estimated follow-on cost of the boat has increased 9 percent; it means only that the cost of the fifth boat in the class is about 9 percent more than the average for boats 2 through 30. Boats 2 through 4 cost more than boat 5, and boats 6 through 30 cost less than boat 5.

During the Cold War, procurement of attack submarines accounted for an average of about 20 percent of SCN. In its testimony last year, Navy officials suggested that about 26 percent of a $9.4 billion annual SCN budget would be allocated for procurement of 1.5 NSSNs per year.

The 1994 report on the affordability of the NSSN program concluded the following:

- If the NSSN procurement rate is 1.5 boats per year, the Navy is successful in its plan to increase SCN to $9.44 billion by the turn of the century, and the NSSN's unit procurement cost is $1.5 billion in FY1998 dollars, then NSSN procurement will require 24 percent of SCN -- a share not much higher than Cold War average of 20 percent, and slightly less than the 26-percent allocation mentioned in the Navy's testimony last year;

- If the NSSN procurement rate is 2 boats per year, then NSSN procurement will require more than 30 percent of SCN, even if SCN is $9.44 billion and the NSSN's unit procurement cost is $1.5 billion in FY1998 dollars. This is somewhat higher than the 26-percent allocation mentioned in the Navy's testimony, and significantly higher than the Cold War average of 20 percent;

- If SCN falls short of $9.44 billion or the NSSN's unit procurement cost exceeds $1.5 billion in FY1998 dollars, or both, then for a procurement rate of 1.5 boats per year, the share of SCN required for NSSN procurement could approach or exceed 30 percent. For a procurement rate of 2 boats per year, it could approach or exceed 40 percent.

In assessing these conclusions, it can be recalled that, given the near-hiatus in submarine procurement during the 1990s, maintaining a force of 45 attack submarines through the 2020s will require a procurement rate after the turn of the century of slightly more than 2 boats per year, while maintaining a force of 51, 55, or 67 boats will require a procurement rate of 2.35, 2.55, or 3.15 boats per year, respectively.

The graph on the next page, taken from the 1994 report, shows the NSSN program's share of SCN as a function of the size of the SCN account and the NSSN procurement rate. The NSSN's unit procurement cost is assumed to be $1.5 billion in FY1998 dollars; if it turns out to be higher or lower, then the three sloping lines on the graph will shift up or down, respectively (i.e., for any given SCN size and procurement rate, the share of SCN required for NSSN procurement would be higher or lower, respectively).

The design of the NSSN has progressed to the point where its procurement cost appears to have been determined to within plus or minus 5 percent. In other words, changing the design of the NSSN where possible at the margin might increase or decrease the cost of the ship by about 5 percent. Achieving a major reduction in the cost of the ship through design changes would likely require a substantial or complete redesign of the boat and of the components that are to be installed in it, which would defer procurement of the first NSSN from FY1998 to some later year.

NSSN Design vs. Milestone Process

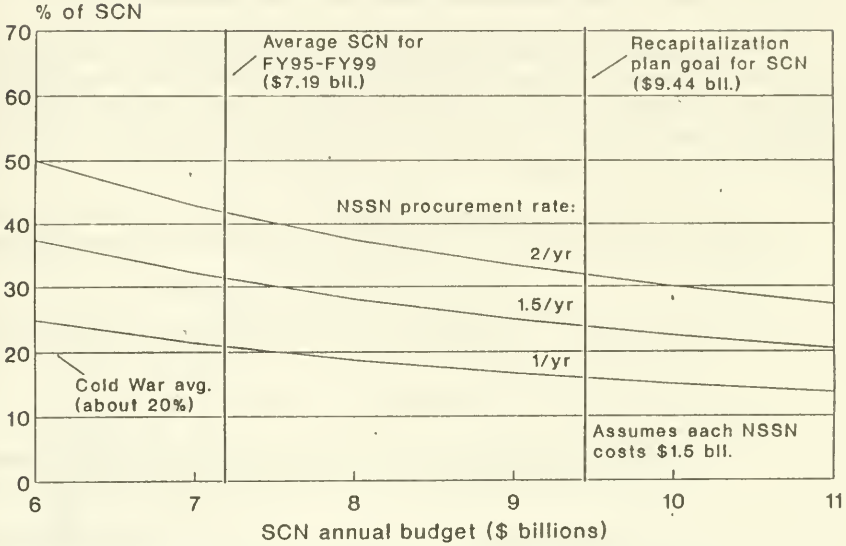
The history of the design effort for the New Attack Submarine raises a potential question for the future regarding the fit between the ship design process, particularly for nuclear-powered submarines, and the DOD Milestone Acquisition process. In short, it appears that the design of the NSSN was more advanced at various points over the last five years than what the milestone process would have suggested.

The NSSN program received Milestone 0 approval in August 1992. This permitted the Navy to begin exploring conceptual design alternatives for the NSSN. In reality, however, such conceptual work was underway in the Navy by 1990.

Similarly, the NSSN program received Milestone 1 approval in August 1994. This permitted the Navy to select a particular conceptual design for the NSSN and move it into the preliminary design process. In reality, however, the Navy had selected and begun to work on a particular conceptual design by 1992.

Figure 1

SSN procurement as % of Navy's shipbuilding budget (SCN)
(FY1998 dollars)



Prepared by CRS, 6/94, based on U.S. Navy data. See text for discussion.

The Navy briefing chart on the next page provides a time line of events in the NSSN design effort in relation to Milestone 0 and Milestone 1.

The Cost and Operational Effectiveness Analysis (COEA) for the NSSN program, prepared in support of the Milestone 1 decision, was forwarded to Congress in September 1993. According to a Dec. 7, 1993 letter from Senator Alfonse D'Amato to Under Secretary of Defense for Acquisition John Deutch, the COEA concludes, in unclassified form (ellipses as in the letter):

> The COEA analysis showed that the 688I Upgrade ... can carry out the missions, but is more vulnerable than other ... alternatives. The acceptable level of vulnerability is a matter of judgement.
>
> - If the vulnerability of the 688I Upgrade is judged acceptable, build 688I Upgrades and minimize near-term expenditures;
>
> - If the vulnerability of the 688I Upgrade is judged too high:
>
>   - If we are going to build only a few submarines, build SSN-21 and avoid the $4 [billion] to $5 billion R&D bill of a new design;
>
>   - If we intend to enter serial production of more than 10 units, we should select among new design alternatives.

In terms of the familiar traffic-light analogy, Members of Congress who rely on the Milestone process and on COEAs to inform their decisions on major weapon acquisition issues might have been looking for a strong green light from the COEA to support a decision to go ahead with the NSSN program. The conclusion above does not appear to provide a strong green light.

The Navy, however, was already well into the design effort for the NSSN by the time the COEA was completed, and appeared to be satisfied with the COEA as long as it did not provide a red light against proceeding with the Navy's general idea for what the NSSN should be. The conclusion above does not appear to provide a red light.

Given the long time needed to design a nuclear-powered submarine, and the need to make important design decisions early in the design process, the time line for the Navy's NSSN design effort appears reasonable. But this time line does not appear to fit very well with the Milestone process as currently structured. As a result, Members of Congress who rely on the Milestone process to monitor a submarine-design effort run the risk of having an understanding of the program's status that lags behind actual events.

One option to prevent this situation from recurring in future submarine design efforts would be to revise the Milestone process so that it can better accommodate the requirements of the submarine-design process. Another option would be to keep the Milestone process as it is, exempt submarine-design efforts from this process, and devise an alternate oversight process that fits the requirements of the submarine-design process.

NEW ATTACK SUBMARINE: PRE-MILESTONE 1

88-90	NAVSEA/NR Focus on SEAWOLF Follow on
1990	SECNAV/CNO/NAVSEA/NR Discussions Studies and Testing Coordinated Maintain SEAWOLF Stealth Trade Speed for Cost Simplify
2/91	SECNAV Issues New Attack Sub Tasking - CNO - requirements - NAVSEA - ship evaluations - NR - propulsion plant
6/91	OPNAV Staff Requirements Report Submarine Operational CDR Input
2/92	CNO Issues Requirements Range
1992	Numerous NAS Concept Briefs: OSD, JCS, Congress
→ 8/92	Milestone 0
1993	Submarine Operator-Design interface Teams Established
9/93	Joint Staff Approves Basic Submarine Characteristics
→ 6/94	Milestone 1

Competing the NSSN Program

In recent weeks, some Members of Congress have inquired about the possibility of competing NSSN production between EB and NNS rather than allocating it to EB, as the Administration plans. In response to these inquiries, some Navy officials have stated that the program cannot be competed in its early years because of the low early procurement rate planned for the NSSN, but that it might be competed later, when the program reaches a procurement rate of 2 boats per year.

The feasibility of competing the NSSN program when it reaches a rate of 2 boats per year is open to question on several counts. First, it is not clear, given the affordability situation discussed earlier, that a procurement rate of 2 boats per year will be achieved; the rate might turn out to be closer to 1.5 boats per year.

Second, even if a rate of 2 boats per year is achieved, this would not appear to be sufficient for holding a meaningful competition between two yards. The minimum sustaining production rate for EB might be 1 boat per year, while for NNS, which also builds surface ships, it might be about 0.5 boats per year. If so, the combined minimum sustaining production rate for the two yards would be 1.5 boats per year, and the two yards would in effect be competing for only a half a boat per year. This would not appear to generate much competitive leverage for the Government.

The Administration last year in effect decided that, for FY1994 and FY1995, a rate of 3 DDG-51 destroyers per year was insufficient for maintaining a meaningful competition between the two shipyards currently building these ships without risking the financial health of these yards. The Navy, moreover, is now reassessing its acquisition strategy for this type of ship, which has a planned procurement rate of 2.67 ships per year during the FY1996-FY2001 Future Years Defense Plan (FYDP). The situation regarding surface combatant construction differs in some respects from the situation regarding submarine construction. Even so, if a meaningful competition between the two surface combatant builders is difficult to maintain at a rate of 2.67 ships per year, how can one be maintained between two submarine builders at a rate of 2 ships per year?

Third, even if a meaningful competition can be achieved, the total production run for the NSSN program may not be large enough for the cost savings achieved through competition to offset the added costs of splitting the production learning curve between two yards. For example, if the NSSN design is procured for a period of 15 years (FY1998-FY2012) and is then succeeded by a follow-on design, if competition does not begin until a procurement rate of 2 boats per year is achieved, if the result of competition is to divide the competed boats evenly between the two yards, and if the yards achieve an 87 percent learning curve on the program (the same learning curve that EB has testified that it achieved on the Trident submarine program), then the effect of splitting the learning curve between two yards would be to add about 13 percent to shipyard construction costs for the program compared to the costs of building all the ships at one yard. This does not include any added costs that might be incurred as a result of materials being ordered by two yards in smaller quantities rather than by one yard in larger quantities.

If competition is not introduced until the procurement rate reaches two per year, the first boat to be competed would be the fourth boat procured. If the yard that built the first three boats achieves an 87 percent learning curve on NSSN production, then this yard would have a 24 percent cost advantage over the other yard in bidding for the fourth boat due to learning-curve effects alone. This does not include any additional cost advantage due to the reconstitution costs that the other yard would face to reestablish submarine production after a hiatus of several years.

If the objective is to employ competition in building NSSNs, another approach would be to hold a competition at the start of NSSN procurement and have it be a winner-take-all competition. This could generate significant competitive leverage for the Government, and it would avoid the added costs associated with splitting a low-production-rate program between two sources.

If a winner-take-all competition were held for NSSN production, the question of whether there should be a split or consolidated arrangement for nuclear warship construction would be decided not by deliberate policy choice, but as a consequence of the outcome of the competition.

To ensure that an up-front, winner-take-all competition for building NSSNs is conducted on a level playing field, certain actions might have to be taken, including the following:

- SSN-23 or some other type of submarine construction work for EB might have to be funded in FY1996 to ensure that EB could be a healthy competitor in FY1998.

- Funding might have to be provided to maintain NNS's submarine-construction capability until FY1998 on a level equal to EB's, and the one-time costs of reconstituting submarine production at NNS in FY1998 after a hiatus of a few years might have to be addressed in the bidding process.

- NNS would need to be maintained as a full observer and consultant, if not a direct participant along with EB and the Navy, throughout the NSSN design process, so that NNS would have an understanding of the NSSN design equal to EB's.

- Any features incorporated into the NSSN design to help optimize the design specifically for EB's production processes and methods would have to be removed from the design, so that the design does not provide EB with a built-in cost advantage.

RELATIVE COSTS OF 2-YARD AND 1-YARD STRATEGIES

Origin of Analysis

As a result of a hearing on submarine acquisition issues before the House National Security Committee subcommittee on Military Procurement on March 16, 1995, an analysis was undertaken of the relative costs of the "2-yard" vs. "1-yard" strategies for acquisition of nuclear-powered warships. This analysis, coordinated by the Congressional Research Service, involved inputs reflecting proprietary and business-sensitive information from NNS and the Navy and independent reviews of these inputs by the Congressional Budget Office, the Congressional Research Service, and the General Accounting Office.

Allocation vs. Competition

The question of who will build the NSSN, and thus the question of whether there will be 2 nuclear warship construction yards or 1, can be decided by either administrative allocation or competition. For those interested in employing competition as the means for deciding this question, the cost analysis discussed here is not relevant. It is only relevant for those interested in deciding the issue by an act of administrative allocation -- either to EB, which would result in the 2-yard strategy, or to NNS, which would result in the 1-yard strategy.

Cost vs. Other Considerations

For those interested in deciding the issue by an act of administrative allocation, the estimated relative costs of the 2-yard and 1-yard strategies is one factor among several that may be considered.

Although the Administration states that it is taking various steps to ensure that its preferred 2-yard strategy will be implemented at the lowest possible cost, it has never argued that the 2-yard strategy would be less expensive overall than the 1-yard strategy. Instead, as noted in its October 1993 report on the Bottom-Up Review (BUR) of U.S. defense policy, it has argued that the 2-yard strategy is preferable primarily in terms of preserving competition and mitigating risk to the nuclear-warship industrial base.

An additional argument that can be considered is the scenario of returning to a submarine production rate of more than 3 boats per year. This issue is discussed earlier in this testimony.

If one determines that the 1-yard strategy is less expensive by some amount, a full consideration of the relative merits of the 2-yard and 1-yard strategies might then involve weighing this cost differential against the value of having a second shipyard for purposes of surge production, risk mitigation, and maintaining a potential for competition.

Limitations of RAND Report

At present, the most thorough independent study of the submarine construction industrial base is the 1994 RAND report entitled *The U.S. Submarine Production Base: An Analysis of Cost, Schedule, and Risk for Selected Force Structures*. Although this report is thorough and helpful on the many questions it addresses, no report of manageable length could cover every aspect of the issue, and the RAND report has certain limitations in scope. In particular, the RAND report, which responded to specific tasking from the Office of the Secretary of Defense, does not directly address three issues of potential interest to Congress.

The first of these is the primary issue under consideration here -- the relative overall costs of the 2-yard and 1-yard strategies. The report examines separate reconstitution costs at EB and NNS, and presents information on production rates if submarines are produced at two yards rather than one. But it does not look at the overall cost to the government of having nuclear warships produced at 2 yards vs. 1.

The second issue it does not address is the scenario in which NNS reconstitutes submarine construction at the end of the 1990s after receiving both carrier construction work (CVN-76) and submarine overhaul and repair work. The study looks only at scenarios where NNS has one form of work but not the other. The omission of the scenario where NNS has both forms of work simultaneously is potentially significant, because NNS officials have based their presentations to Congress on this scenario, and not on the scenario of having only one form of work or the other. The RAND report provides estimates of how the cost of reconstituting submarine construction work at NNS is reduced if NNS has either form of work. But it does not provide an estimate of how these costs might be further lowered if NNS has both forms of work. The report thus cannot serve as an independent source of information on this particular point.

Third, the report examines only one option for providing EB with submarine construction work (as opposed to submarine overhaul and repair work) as a bridge to the start of NSSN production, namely, construction of SSN-23. It does not examine other options for providing submarine construction work, such as building only a portion of SSN-23, building special-mission hull sections for backfitting into existing SSN-688s, or building 1 or 2 additional Improved SSN-688 class submarines. The report thus cannot serve as an independent source of information on the costs of these options or on the question of whether building SSN-23 represents the most cost-effective form of submarine-construction work for bridging EB to the start of NSSN production.

Shorter- and Longer-Term Cost Consequences

A decision by Congress to allocate NSSN production to EB or NNS would have both shorter- and longer-term cost consequences. Accordingly, the analysis was designed to examine both shorter- and longer-term cost consequences. The study examines costs during the period FY1996-FY2012.

Cost Effects on All Work Done at EB and NNS

The relative overall costs of the 2-yard and 1-yard strategies reflect not just cost effects on submarine construction, but on other work for the government done at EB and NNS, such as submarine overhaul and repair work; carrier construction, refueling, overhaul and repair work; and other surface ship construction and repair work. An analysis that examines only the cost impact on submarine construction work will not capture indirect cost effects on other forms of work for the government due to changes in things such as materials costs and reallocation of fixed overhead costs. The analysis, therefore, was designed to include the calculated cost impact on all work done for the government at EB and NNS, and not just submarine construction work.

3 Variables Leading to 8 Scenarios

The relative costs of the 2-yard and 1-yard strategies depend in part on 3 key variables -- the steady-state procurement rate of the NSSN, the level of carrier-related work at NNS, and the level of other (i.e., non-submarine, non-carrier) work at NNS, which includes commercial ship construction and repair work and potentially other Navy work, such as, for example, construction of LPD-17s. To understand the sensitivity of the analysis to changes in these 3 variables, the study examined a higher and lower value for each variable:

- For NSSN construction, the period of steady-state procurement began in FY2003. The higher value was 2 boats per year, the lower value was 1.5 boats per year.

- For carrier-related work, the higher value included funding of 3 new-construction CVNs and 4 CVN refueling overhauls (RFOHs) for NNS during the period FY1996-FY2012. The lower value included funding of 2 new-construction CVNs and 3 CVN RFOHs for NNS during this period.

- For other work at NNS, the lower value assumed a minimal amount of such work during the period FY1996-FY2012, while the higher value assumed a fairly substantial amount of such work during this period.

These 3 variables, each with 2 values, were used to generate 8 scenarios (2 x 2 x 2 = 8) that were labeled 1A through 4B. Scenario 1A assumed the higher value for all 3 variables; Scenario 4B assumed the lower value for all 3. Scenarios 1B through 4A are intermediate cases representing different mixes of higher and lower values on the 3 variables.

Limited Time; Limited Visibility

To support mark-up needs, the analysis was carried out in a very short period of time. The ground rules for the analysis were not fully established until mid-April. NNS's submission was delivered in the first week of May, and the review by the 3 congressional support agencies began at that time and was to be completed within one week.

None of the parties involved in the effort had full visibility of all aspects of the study. NNS did not have access to EB business-sensitive data, or to the Navy's modeling or estimating methods. The Navy did not have access to NNS's submission, although it did have access to an earlier cost study that NNS generated on its own and submitted to the Navy prior to the start of this analysis. The 3 congressional support agencies, in large part because of time constraints, had only limited exposure to NNS's and the Navy's data and modeling and estimating methods.

The results of the analysis add substantially to the very limited amount of information on the issue that existed prior to the analysis. Nevertheless, the limits on time and visibility should be taken into account in using the results of the analysis.

Shorter-Term Cost Effects

The shorter-term cost effects of switching from the Administration's preferred 2-yard strategy to the 1-yard strategy include the one-time transitional cost effects of switching planned NSSN production from EB to NNS and the potential NSSN production savings (due to economies of scope) that NNS might achieve (relative to the Administration's plan) during the NSSN production startup period when the procurement rate will be less than 1 boat per year. The one-time transitional cost effects include but are not necessarily limited to the following:

- **Not funding SSN-23.** This includes not approving the requested FY1996 funding to complete funding for SSN-23, plus the recovery of any unexpended portion of the prior-year funding available for SSN-23.

- **Funding an additional NSSN.** The analysis was set up to compare strategies for producing an equal number of SSNs. Since the 1-yard strategy does not require funding SSN-23 in FY1996, an additional NSSN was added in a subsequent year to the 1-yard strategy to make up the difference. The year chosen was FY2002, which was the year outside the FYDP that was closest to FY1996, and a year in which there is some uncertainty as to whether the number of boats to be funded will be 1 or 2.

- **Supporting or reconstituting component sources.** This includes the costs of supporting component vendors that were to have been supported by SSN-23 or reconstituting these sources at a later point either as independent vendors or as in-house NNS manufacturing capabilities.

- **Submarine close-down at EB.** This would include any costs which the Federal government would be obligated to pay as a result of the permanent closing down of submarine production at EB. If the end of submarine production at EB would likely lead to the complete closure of EB, this would include any costs that the government would be obligated to pay as a result of the closure of the yard, including the costs of transferring to another location EB's current functions as a reactor plant planning yard and a class planning yard.

- **Avoidance of submarine shut-down at NNS.** This includes the avoidance of any costs which the Federal government would have been obligated to pay as a result of shutting down the submarine production facility at NNS in a manner that preserved an option, as called for under the Administration's plan, to reconstitute submarine production at NNS at some later point for purposes of generating competition or meeting a need for building more than 3 submarines per year.

- **Completing current contracts at EB.** This includes the cost impact on contracts currently in progress at EB to build new submarines or overhaul and repair existing submarines. Cost effects could include effects on labor costs, labor efficiency, materials costs, and overhead costs.

- **Transferring and altering NSSN design.** This includes the costs to transfer NSSN design data from EB's computer design system to NNS's computer design system, to develop among NNS's designers an understanding of the NSSN design comparable to that of EB's designers, to remove from the NSSN design features meant to optimize the design for EB's unique production processes and methods, and to insert into the NSSN design new features meant to reoptimize the design for NNS's unique production processes and methods.

- **Transferring submarine overhaul/repair work to NNS.** This includes the direct change in cost to the government of having this work done at NNS rather than at a naval shipyard, and the indirect effects (due to changes in labor efficiency, materials costs, and allocation of overhead costs) on the cost of other work performed at NNS and the naval shipyard.

Long-Term Cost Effects

Longer-term cost effects are primarily the recurring cost effects associated with performing the work in question at 1 yard rather than 2. They include but are not necessarily limited to the following:

- **Cost of capital.** The cost to EB and NNS to borrow money to finance yard modernization under the 2-yard strategy might differ from the cost to NNS to borrow money for this purpose under the 1-yard strategy.

- **Cost of labor.** Bargaining conditions between management and the work force over wages and benefits at EB and NNS under the 2-yard strategy might differ from those at NNS under the 1-yard strategy. This could lead to a differential between the two strategies in the area of wages and benefits.

- **Productivity of labor.** The need to move workers from one form of work to another, or opportunities for doing so, may differ under the 2-yard and 1-yard strategies. This could lead to a differential between the two strategies in the area of overall labor productivity.

- **Cost of materials.** The degree of efficiency with which materials may be ordered by EB and NNS under the 2-yard strategy may differ from the degree of efficiency with which materials might be ordered by NNS under the 1-yard strategy.

- **Fixed overhead costs.** A principal argument made by those in favor of the 1-yard strategy is that the various forms of work performed would bear the fixed overhead costs of 1 nuclear shipyard rather than 2.

Results and Comments

NNS's and Navy's Results Converted to FY1996 Dollars

Both NNS and the Navy prepared estimates of the cumulative savings that result over the period FY1996-FY2012 from adopting the 1-yard strategy rather than the Administration's preferred 2-yard strategy. NNS's estimates, which covered all 8 scenarios, were calculated in then-year dollars using a steady 4 percent escalation (inflation) rate. Other escalation rates which can be used include the CPI-U rate of 3.4 percent, which CBO uses in its January 1995 report entitled *The Economic and Budget Outlook: Fiscal Years 1996-2000*, and 3.0 percent, which the DOD Comptroller uses as its escalator for purchases in its March 1995 report entitled *National Defense Budget Estimates for FY1996.*

Another option is to convert NNS's estimates to constant FY1996 dollars by subtracting out the effects of NNS's 4 percent escalation rate.

A third option is to convert NNS's estimates into discounted dollars. This involves the use of a discount rate on constant-dollar figures to reflect the value of spending money now rather than at some point in the future. In its 1994 report on the submarine production base, RAND presents discounted-dollar calculations and states:

> Decisions regarding spending and investment over the long term should be made on the basis of discounted dollars. Some would say that no saving results from postponing a billion-dollar purchase by ten years, that it's "just moving money around." But that ignores the value most people would ascribe to having the benefits of that purchase now rather than later (whether that money goes to a submarine or some other purpose).

RAND used a 5 percent discount rate in its report; the Navy's 1993 NSSN COEA, conducted by the Center for Naval Analyses, used a similar rate. Another rate -- the one used by CRS economics senior specialist Jane Gravelle, the senior CRS authority on discount rates -- is 7 percent. A very low rate might be 3 percent -- the 1993 rate on 3-month U.S. Treasury Securities, which was the lowest such annual rate in the last 30 years.

The table below presents NNS's total estimated savings for the period FY1996-FY2012 in all these forms.

TABLE 4. NNS ESTIMATED SAVINGS, FY1996-FY2012

(in billions of escalated, constant FY1996, and discounted dollars)

	Scenario							
	1A	1B	2A	2B	3A	3B	4A	4B
Escalated at 4.0%	7.6	7.3	7.0	6.8	6.8	6.4	6.2	5.9
Escalated at 3.4%	7.3	7.0	6.7	6.5	6.5	6.1	5.9	5.6
Escalated at 3.0%	7.1	6.8	6.6	6.3	6.3	5.9	5.8	5.5
Constant FY1996 $	5.8	5.5	5.4	5.2	5.2	4.9	4.8	4.6
Discounted at 3.0%	4.9	4.6	4.6	4.4	4.4	4.2	4.2	3.9
Discounted at 5.0%	4.4	4.2	4.2	4.0	4.0	3.8	3.8	3.6
Discounted at 7.0%	4.0	3.9	3.9	3.7	3.7	3.5	3.6	3.4

Source: Prepared by CRS based on NNS data.

The Navy prepared 3 estimates -- one for a scenario comparable to NNS's scenario 1A, one for a scenario comparable to NNS's scenario 1B, and one -- labeled 1X here -- that appears to fall between scenarios 1A and 1B in terms of the amount of other work assumed at NNS. The Navy believes scenario 1X to be the most realistic scenario. The Navy calculated its estimates in FY1995 dollars.

The table on the next page converts the Navy's estimates into constant FY1996 dollars and displays them with the NNS estimates in constant FY1996 dollars.

TABLE 5. NNS AND NAVY ESTIMATED TOTAL SAVINGS, FY1996-FY2012

(in billions of constant FY1996 dollars)

	Scenario								
	1A	1X	1B	2A	2B	3A	3B	4A	4B
NNS estimate	5.8	n/a	5.5	5.4	5.2	5.2	4.9	4.8	4.6
Navy estimate	1.9	1.3	0.8	n/a	n/a	n/a	n/a	n/a	n/a

Source: Prepared by CRS based on NNS and Navy data.

As can be seen in the table, for scenarios where estimates are available from both NNS and the Navy (scenarios 1A and 1B), the Navy and NNS agree that a 1-yard strategy is less expensive than the 2-yard strategy, but disagree substantially on the amount of savings that would be realized by the 1-yard strategy. This difference is due to differences between the NNS and Navy estimates for both shorter-term cost effects and longer-term cost effects.

Longer-term cost effects are most easily viewed during the period FY2006-FY2012. This is the period after shorter-term transitional cost effects have played themselves out, and when the NSSN program reaches steady-state production conditions in the shipyard. The table below presents estimated longer-term cost effects during the period FY2006 to FY2012 in the form of an average annual figure. The table includes scenario 1A (which results in the highest estimated savings figure for both the Navy NNS), scenario 1X (which the Navy believes to be the most realistic scenario, and which results in the lowest estimated savings figure for the Navy), scenario 1B (for which both the Navy and NNS made estimates), and scenario 4B (which results in the lowest estimated savings figure for NNS).

TABLE 6. ESTIMATED AVERAGE ANNUAL RECURRING SAVINGS, FY2006-FY2012

(in millions of constant FY1996 dollars,
rounded to the nearest five million)

	Scenario			
	1A	1X	1B	4B
NNS estimate	330	n/a	325	230
Navy estimate	130	60	75	n/a

Source: Prepared by CRS based on NNS and Navy data.

As can be seen in the table, for scenarios where estimates are available from both NNS and the Navy (scenarios 1A and 1B), NNS's estimated annual recurring savings figures are much larger than the Navy's estimated annual savings figure. Based on an analysis of the composition of NNS's estimated savings and consultations with the Navy regarding the Navy's estimate, it appears that the difference between the NNS and Navy estimates results primarily not from differences in NNS and Navy estimates of shipyard fixed overhead costs but rather from differences between NNS and Navy estimates of shipyard wages, worker hours, and material costs. With regard to fixed overhead costs, it can be noted that the 1994 RAND report estimated the fixed costs of a notional submarine production facility at $50 million to $150 million per year in FY1992 dollars.

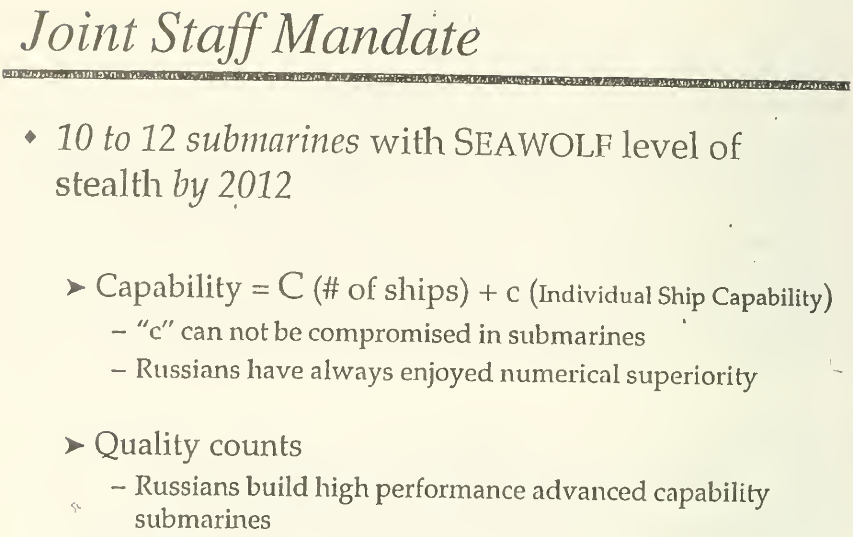
In judging the relative merits of the 2-yard and 1-yard strategies, a key question for Congress is: In the longer run, what is the more accurate estimate of annual recurring savings associated with the 1-yard strategy -- is it closer to the NNS estimate or the Navy estimate -- and how does this figure compare with the value of having a second shipyard for purposes of surge production, risk mitigation, and maintaining a potential for competition?

Mr. Chairman, distinguished members of the subcommittee, this concludes my testimony. Thank you again for the opportunity to appear before you to discuss these issues. I will be pleased to respond to any questions you might have.

ATTACHMENTS:

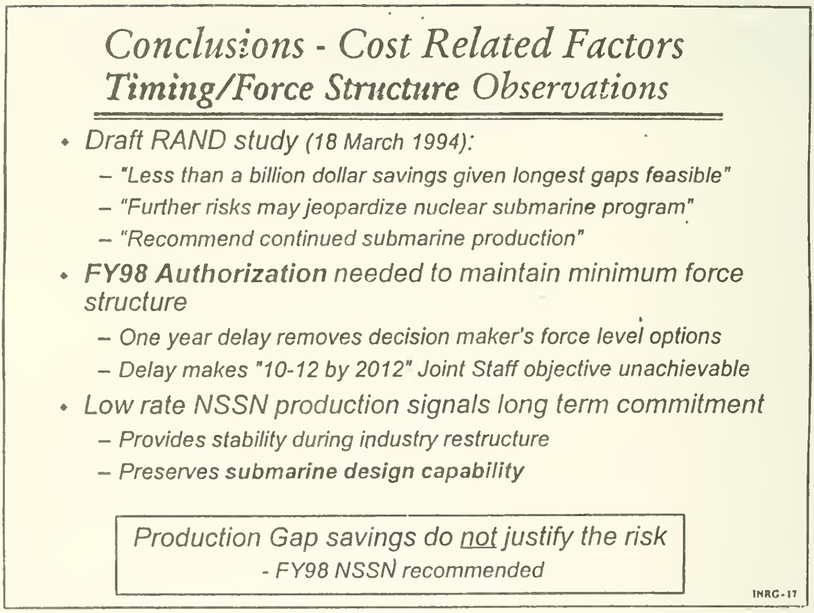
BRIEFING SLIDES CITING JCS REQUIREMENT FOR 51 TO 67 SSNs, INCLUDING 10 TO 12 BOATS WITH SEAWOLF-LEVEL STEALTH BY 2012

Attached are Navy briefing slides, except the slide entitled "Conclusions - Cost Related Factors," which is taken from the report of the Navy-appointed independent NSSN study group, also known as the Reynolds panel.



Joint Staff Mandate

- *10 to 12 submarines* with SEAWOLF level of stealth *by 2012*
    - ➤ Capability = C (# of ships) + c (Individual Ship Capability)
        - – "c" can not be compromised in submarines
        - – Russians have always enjoyed numerical superiority
    - ➤ Quality counts
        - – Russians build high performance advanced capability submarines

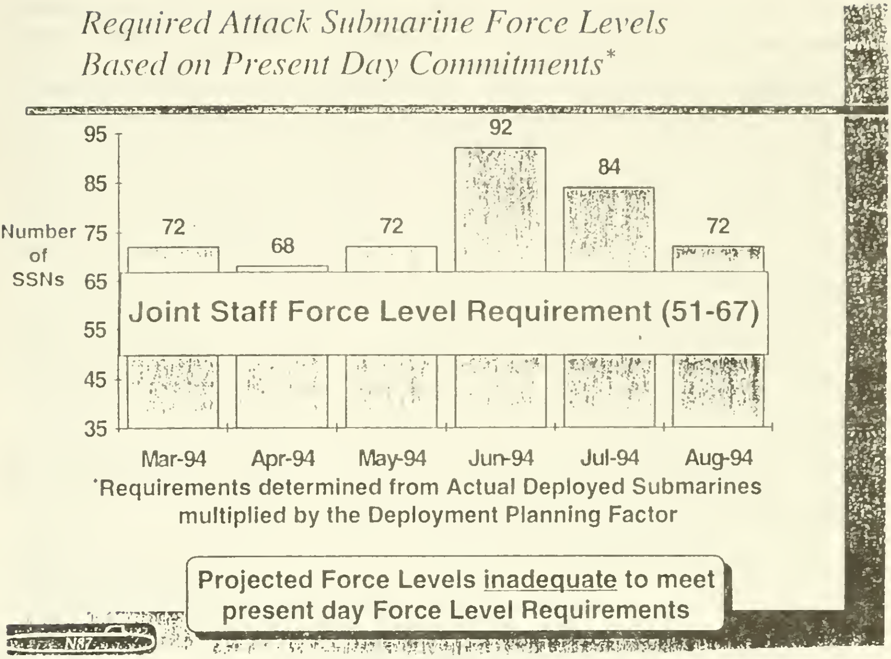


Conclusions - Cost Related Factors
Timing/Force Structure Observations

- *Draft RAND study (18 March 1994):*
    - *– "Less than a billion dollar savings given longest gaps feasible"*
    - *– "Further risks may jeopardize nuclear submarine program"*
    - *– "Recommend continued submarine production"*
- ***FY98 Authorization** needed to maintain minimum force structure*
    - *– One year delay removes decision maker's force level options*
    - *– Delay makes "10-12 by 2012" Joint Staff objective unachievable*
- *Low rate NSSN production signals long term commitment*
    - *– Provides stability during industry restructure*
    - *– Preserves submarine design capability*

Production Gap savings do not justify the risk
- FY98 NSSN recommended

INRC-17



*Required Attack Submarine Force Levels Based on Present Day Commitments**

*Requirements determined from Actual Deployed Submarines multiplied by the Deployment Planning Factor

Projected Force Levels inadequate to meet present day Force Level Requirements

Senator COHEN. And Dr. Williams.

STATEMENT OF CINDY WILLIAMS, ASSISTANT DIRECTOR, NATIONAL SECURITY DIVISION, CONGRESSIONAL BUDGET OFFICE

Dr. WILLIAMS. Thank you, Mr. Chairman and members of the committee. I really appreciate the opportunity to be here today to talk about these important issues.

As was mentioned this morning, CBO is working on a study of the potential risks and potential savings that would be associated both with canceling the third *Seawolf* submarine and with consolidating construction of aircraft carriers and submarines in a single shipyard.

I did provide the committee with a written statement that discusses our preliminary analyses, and with your permission I would like to submit that for the record and just summarize the main points here.

The fundamental point is that today there is excess capacity in the nuclear shipbuilding industrial base. Everyone agrees that eliminating the excess would save money. So the debate centers around whether the benefits of retaining the excess capacity are worth the extra cost.

The Defense Department has chosen Electric Boat to design and build the first New Attack Submarine and plans to designate the shipyard to construct more of the ships. There was some debate this morning about at what point to entertain a competition.

DOD has also decided to produce a third *Seawolf* submarine at Electric Boat, to ensure that they remain viable until production of the first New Attack Submarine can begin.

In effect, through this strategy DOD has instituted an industrial policy that would maintain two private-sector shipyards capable of producing nuclear-powered vessels. But it is also designating which company will produce each type of vessel for the foreseeable future: Electric Boat for submarines, Newport News for aircraft carriers.

Now, canceling the third *Seawolf* and consolidating construction of all nuclear-powered ships at a single shipyard would almost surely save money, both in the near term and in the far term. I will talk first about the third *Seawolf*.

Canceling the submarine would save about $1.5 billion in 1996. That savings would be offset by about $500 million in expenses over the next 5 years to shut down and restart submarine production and to pay for the impact on existing contracts.

Those expenses plus any contract termination costs might possibly be covered using the $530 million in unspent prior-year appropriations for this ship. But by the time the future expenses accrued, the prior-year funds might already be spent.

The Navy has justified purchase of the third *Seawolf* primarily as a way of keeping the submarine industrial base healthy until production of the New Attack Submarine begins. And although the *Seawolf* has clear military value, it is not critical to the Defense Department's force structure requirements.

In fact, although Electric Boat probably does need the *Seawolf* or some other submarine construction project to remain viable until construction of the New Attack Submarine begins, canceling the *Seawolf* might not harm the wider submarine industrial base as much as some people fear.

Because the *Seawolf* class of ships has already been designed, and because the nuclear reactor for the third ship is being built with advance procurement funds, completing the ship will do little to help submarine designers or to help the vendors of nuclear components.

Finishing the ship would help the vendors of non-nuclear components, as Ms. Slatkin testified this morning. Although most of these vendors produce items similar to those used in other end products and require no specialized industrial processes, a few of them use very specialized processes and are considered by RAND Corporation and the Navy to be critical to future submarine fabrication.

Some of these vendors would go out of business if they suffered an extended loss of the Navy work. If the *Seawolf* is not purchased, the Navy might need to provide these firms with other work, such as prototyping or producing of components before they are needed, to keep them afloat for the next few years.

Such work is included in our $500 million estimate of offsetting costs that would be associated with canceling the *Seawolf*.

Now I would like to turn to the question of consolidating future nuclear shipbuilding at Newport News. At the low rates of production that the Navy envisions, paying the overhead costs associated with two separate shipyards is not very economical.

Moreover, a single, larger shipyard could streamline its workforce by shifting workers between carrier and submarine production as needed.

Newport News has estimated that consolidating all nuclear ship construction at its shipyard would save the government on the order of $7 billion this year dollars between now and 2012. The Navy agrees that consolidation would result in savings, but only $1.3 billion (in 1996 dollars) during the period. Both estimates assume that the third *Seawolf* is canceled.

I should reiterate that the Navy has submitted its cost estimates in constant 1996 dollars, whereas the Newport News estimate of $7.6 billion is in then-year (inflated) dollars. If you pull the inflation out of the Newport News estimate, you get something like $5.8 billion. So those are more apples and apples comparisons of two similar cases between the Navy's estimate and the Newport News estimate.

CBO has not yet conducted its independent estimate of potential savings. We are working on that now and hope to have it done by the end of June. But based on preliminary analyses, we do——

Senator WARNER. If it is the end of June is that of value to this subcommittee here?

Senator COHEN. Well, I am not sure we are going to get to it before the end of June.

Senator WARNER. All right. Thank you.

Dr. WILLIAMS. Based on our preliminary analyses, we do believe that the Navy estimate is too low and the Newport News estimate is too high.

Now, despite the potential cost savings, the Navy does argue that redundant production facilities need to be retained to ensure continued production capability in the event of a natural disaster at one yard and also to accommodate increased rates of construction in the event of a resurgent threat.

The Navy also expresses concern about the potential loss of Electric Boat's substantial expertise in designing nuclear submarines.

Yet the Navy does not have redundant facilities to protect nuclear aircraft carrier production against an unforeseen disaster such as a hurricane or, worse yet, a nuclear mishap. Even during the Cold War the Navy relied on a single shipyard to produce its aircraft carriers.

As for concerns about capacity in the event of a resurgent threat, it is difficult at this point to envision a threat that would compel the Navy to build more attack submarines than Newport News could produce.

The Navy's concern about losing Electric Boat as its premier submarine designer may be somewhat overstated since Newport News designed the SSN–688, the class that makes up a large part of today's submarine force.

But if retaining Electric Boat's design expertise is critical, and if it is a central reason for keeping the firm alive, the Navy might consider retaining the company's design function alone rather than pay the cost of keeping an entire second shipyard.

The Navy argues that two shipyards are needed to retain the potential for competition in future submarine construction work. Yet under the Navy's current plan to assign the first several submarines to Electric Boat, Newport News's competitiveness in the submarine business would erode over time.

Moreover, at the low rates of submarine construction that are expected, the Navy would probably find it difficult to sustain competition between two shipyards either now or in the future.

Although the purpose of competition would obviously be to save the government money, it could turn out to cost more than just consolidating production at a single shipyard now.

If competition were conducted annually, it would split an already small purchase between two shipyards, thus lowering the expected payoffs for learning at both contractors and also requiring the Navy to pay overhead on two sets of under-utilized facilities.

Also, to make the competition fair, as was mentioned by Mr. O'Rourke, the government might have to pay substantial amounts of money to level the playing field for the two yards.

Rather than holding annual competitions, the Navy might do what Mr. O'Rourke suggested, which is to conduct a one-time, winner-take-all competition for multiple ships or even for the entire purchase of New Attack Submarines. But even a winner-take-all competition might require the Navy to spend significant amounts of money to level the playing field.

We do not yet know whether the long-term savings that would result from competition would exceed those initial costs. We do know that it would take longer than simply assigning the work to one shipyard or the other and in the end would have the same effect. The winner of the competition would become the supplier of submarines for the foreseeable future.

In short, if annual competition is not realistic at the low rates of production planned, then allocating work to one of the shipyards might be the most cost-effective acquisition strategy.

Deciding now to consolidate production of carriers and submarines at Newport News rather than producing them in separate yards would eliminate the need to buy the third *Seawolf*. It would achieve economies of scale, it would reduce the fixed cost of production facilities, and it would allow the workforce to shift between production of the two types of ships.

The question, of course, is whether the non-monetary risks that the Navy has articulated would outweigh these savings.

That concludes my remarks. I thank you very much.

Senator COHEN. Thank you very much, Dr. Williams.

[The prepared statement of Dr. Williams follows:]

PREPARED STATEMENT BY CINDY WILLIAMS, ASSISTANT DIRECTOR, NATIONAL SECURITY DIVISION, CONGRESSIONAL BUDGET OFFICE

Mr. Chairman and Members of the subcommittee, I am pleased to be here today to discuss issues related to the administration's plan for producing nuclear attack submarines.

Attack submarine programs are a significant portion of the Navy's overall acquisition plan: in its 1996 request, the administration has allocated $2.8 billion for them. That sum includes $1,507 million to complete the funding for a third *Seawolf* submarine, $700 million in advanced procurement funding to support procurement of the first New Attack Submarine (NAS) in 1998, $455 million in research and development funding for the NAS, and $127 million in technology programs supporting the *Seawolf* program.

My testimony today presents the Congressional Budget Office's (CBO's) preliminary findings from an ongoing study of nuclear-capable shipbuilders, which we have undertaken at the request of Senator McCain. That effort is focused on evaluating the potential long-term advantages and disadvantages, as well as the near term costs and savings, of consolidating all nuclear shipbuilding in one yard.

Two shipyards currently produce nuclear-powered vessels: General Dynamics' Electric Boat Division, which specializes in submarines, and Tenneco's Newport News Shipbuilding, which builds both submarines and aircraft carriers. The Department of Defense (DOD) has chosen Electric Boat to design and build the first NAS and plans to designate the shipyard to construct more of the ships. It has also chosen to complete a third *Seawolf* submarine at Electric Boat to ensure that the shipyard continues operating until production of the first NAS begins.

Newport News Shipbuilding has recently petitioned the Congress to mandate that procurement of the NAS be based on "full and open competition." It claims that such a competition would reveal it to be the lower-cost builder. In support of its claim, Newport News has provided an analysis indicating savings of almost $2 billion for the first five ships and $7 billion to $10 billion over the life of the program. The Navy, however, claims that savings would be much less—$1.3 billion through 2012. Furthermore, it asserts that opening up the NAS program for competition at this point would lead to significant delays and, were Newport News to win the competition, the likely prospect that submarine production would be reduced to a single yard.

My testimony today will focus on our preliminary findings in three areas:

- The need for the third *Seawolf* submarine that DOD has requested in its fiscal year 1996 budget and the budgetary savings that would result if it was not approved;
- The risks and potential for savings that would be associated with consolidating all nuclear ship construction in one yard; and
- The gains and costs from holding a competition or a series of competitions for the New Attack Submarine program.

CANCELING THE SEAWOLF

With the reduced threat from Russian submarines in the post-Cold War world, DOD plans to reduce its force of submarines from 84 in 1995 to between 45 and 55 by the end of the decade and beyond. To reduce the force, the Navy is currently retiring submarines before the end of their service lives. Even with those retirements, the Navy could meet DOD's force goal without producing submarines again until at least 2003. Why does the third *Seawolf* need to be authorized in 1996? The Navy argues that it supports military requirements and helps maintain the industrial base for producing submarines.

Military Value of the Third Seawolf

In addition to DOD's general force goal of 45 to 55 submarines, the Joint Chiefs of Staff (JCS) have stipulated that by 2012, 10 to 12 of those ships need to be as quiet as the *Seawolf*—that is, either *Seawolf* or NAS class vessels. Of course, other attributes, such as the quantity and quality of weapons carried and the quality of a submarine's sensors, combat system, and crew, make important contributions to its overall combat power. But the Navy has always regarded a submarine's level of quietness as an important factor in keeping it hidden from the enemy. A few of the latest Russian attack submarines are quieter at certain speeds than the Navy's existing *Los Angeles* (688I) class ships, and the Navy argues that it needs submarines that are quieter than the Russian ships. Both the *Seawolf* and the NAS—equally quiet ships-can fulfill such requirements.

Although the third *Seawolf* has military value and supports DOD's military requirements, the ship is not critical to fulfill them. Assuming the Navy will achieve a minimum production rate of 1.5 NASs per year beginning in 2002, it will be able to meet both the general force goal of 45 to 55 ships and the JCS requirement for very quiet submarines without buying the third *Seawolf*.

Effect on the Industrial Base

Although it has argued that the third *Seawolf* does have military value, DOD has indicated that it needs to build the ship now primarily to shore up the industrial base to produce submarines in the future. The segment of the industrial base helped most from completing the ship is submarine production at the shipyard level. DOD designated Electric Boat to build the third *Seawolf* to ensure that the shipyard would survive until the NAS is authorized for production in fiscal year 1998.

Apart from its benefits to the prime contractor, completing the third *Seawolf* submarine does little to help maintain the industrial base for the design of submarines or for the supply of nuclear submarine components. Because the *Seawolf* class of ships has already been designed, building the third ship no longer requires the skills of numerous design engineers. Electric Boat's designers have already begun working on the design for the NAS. Similarly, because the nuclear reactor for the ship is already being built with advance procurement funds, completing the vessel does little for vendors that produce nuclear components for ships and submarines. Those vendors will benefit more from the authorization of the CVN–76 aircraft carrier last year and the NAS—wherever it is produced—than they will from producing the third *Seawolf*.

Buying the third *Seawolf* will support suppliers of certain nonnuclear components, but that may not be necessary. According to a study on the submarine industrial base for DOD conducted by RAND, most vendors supplying nonnuclear components could remain viable suppliers even with a gap of several years in submarine starts.

SAVINGS FROM CANCELING THE THIRD SEAWOLF

The Navy has requested $1.5 billion in 1996 to complete the third *Seawolf*. The Congress has already appropriated about $920 million to fund advance procurement of the nuclear reactor, combat system, and other components. (As of March 1995, the Navy had spent $390 million of the $920 million, leaving $530 million unspent.) Those previous appropriations bring the total cost of the ship to about $2.4 billion.

Savings in 1996 from canceling the third *Seawolf* would be $1.5 billion, an amount that would be offset by potential added costs of $500 million over the next 5 years (see Table 1). The offsetting costs would include those of shutting down production now, restarting dormant facilities, and retraining the work force when the NAS is ready to begin production, and the impact on existing contracts. Thus, the net savings from canceling the third *Seawolf* would be about $1 billion.

TABLE 1. SAVINGS FROM CANCELING THE THIRD SEAWOLF

[In billions of dollars]

	Dollars
Total cost of the submarine	$2.4
Amount appropriated in previous years	[1]−0.9
Amount requested in 1996	1.5
Reconstitution expenses	−0.5
CBO estimate of net savings	1.0

SOURCE: Congressional Budget Office based on data from the Department of Defense and RAND.

[1] Unspent or appropriations of $350 million might be used to pay any costs for terminating contracts or expenses for reconstituting production. In its analysis, CBO did not assume that occurred because the funds might be spent before the expenses come due.

Some or all of the $500 million in future offsetting costs and any costs for terminating contracts on the third *Seawolf* might be paid from the $530 million in unspent appropriations from the previous year. In this analysis, CBO did not assume that occurred, however, because those prior year funds could be spent before such costs come due.

CONSOLIDATING PRODUCTION OF NUCLEAR-POWERED SHIPS AT ONE SHIPYARD

Consolidating the production of nuclear-powered ships at a single shipyard would also be likely to generate long-term savings. Because Newport News Shipbuilding has the facilities to produce both aircraft carriers and submarines, whereas Electric Boat builds only submarines, the only realistic plan for consolidation would be at the former. Newport News has given the Congress its own estimate of such savings from now until the year 2012. That estimate comes to $7.6 billion. The Navy agrees that some savings during that period would occur, but it believes such savings would be only $1.3 billion. (Both estimates include canceling the third *Seawolf*) The Navy also argues that the risks of cutting back to a single shipyard outweigh the likely savings.

Long-Term Savings

Consolidating production at Newport News would eliminate excess shipbuilding capacity at Electric Boat, which has no commercial business to help defray the costs to the Government of maintaining expensive facilities and certifications to produce nuclear-powered ships. Once consolidation was completed, the Navy would need to support the fixed costs of only one private-sector, nuclear-capable shipyard—the larger Newport News. Given the Navy's planned low rates of construction for submarines and aircraft carriers, those economies of scale are likely to become important.

In addition, Newport News could achieve efficiencies by shifting its workforce between carrier and submarine work. Building military ships to strict government specifications requires a skilled workforce. According to the RAND study on the submarine industrial base, most of the skills required to build a submarine are the same as those needed to produce or overhaul a carrier. Over the longer term, with the low rates of carrier and submarine production, a flexible workforce at one shipyard that could shift between carrier and submarine production might help retain a stable, skilled workforce more effectively and at less cost than separate workforces for carriers and submarines.

Also, if the third *Seawolf* is canceled and the construction of the NAS is delayed, reconstituting production at Newport News is likely to be less expensive than doing so at Electric Boat. If the ship is canceled in 1996, submarine production would have to be shut down and reconstituted later when NAS production begins. Reconstitution in 1998 would cost about the same at Newport News and Electric Boat, but the larger yard's cost advantage would increase if reconstitution was delayed.

The cost advantage at Newport News would result from its ability to shift its workforce from the CVN–76 aircraft carrier to the NAS. (The RAND study states that the costs of finding, rehiring, and retraining a skilled workforce dwarf all other costs of reconstituting submarine production.) Although current Navy plans call for NAS production to begin in 1998, delays in programs of this size are not uncommon. Exploring and defining the concept for the basic design of the ship took a year longer than planned and thus might affect the schedule for production. In addition, an internal Navy memorandum in the fall of 1994 states that the Chief of Naval Operations was willing to delay production of the NAS to hind programs of higher priority, which might indicate his willingness to do so in the future. Thus, reconstituting submarine production might well be delayed.

Short-Term Costs

Although consolidating construction at Newport News would save money over the long term, it might entail some short-term costs. The Navy and Newport News disagree about the level of those costs. Electric Boat is designing the NAS to be produced in its own facility. The Navy estimates that it would cost about $200 million and take 2 to 4 years for Electric Boat to redesign the ship so that it could be produced at Newport News. Alternatively, the president of Newport News claims that such costs would be negligible because the submarine is still in the early stages of design, and modern design tools (computer-aided design systems) make redesign much easier and cheaper. Both shipyards have such tools. In any case, in its final report, CBO will analyze that issue more thoroughly.

Maintaining the Industrial Base

The Navy is concerned that any significant delay in the NAS program could endanger the industrial base for suppliers of submarine components. If redesign caused a significant delay, the Navy might need to take some action to ensure the survival of those vendors. According to RAND, it might keep them in business by funding items before the items were needed, paying them to build prototypes, or using them to revitalize, modernize, or replace equipment on existing submarines. According to the General Accounting Office, if key vendors went out of business, the cost and time to reconstitute production could be reduced by having the Government or the shipbuilder take over production, as Newport News did with torpedo tubes.

Risks of Consolidating Production

The Navy argues that the risks imposed by consolidating to a single nuclear-capable shipyard outweigh the potential cost savings. It maintains that two yards to build submarines are needed to hedge against the possibility of losing a shipyard (for example, from a natural disaster) or to increase rates of production if a Russian submarine threat increases dramatically. If a second yard—Electric Boat—was needed and had already closed, the Navy argues that it would be difficult and time-consuming to get it recertified to build nuclear-powered ships.

Not least, the Navy is reluctant to lose Electric Boat because it regards it as the preeminent yard in the United States for nuclear submarine design and construction technology. In particular, it notes that the shipyard designed the nuclear propulsion plants of 18 of the last 19 classes of submarines and provides design, engineering, production, and fleet support for the *Seawolf* and the Trident ballistic missile submarine programs.

But, in fact, only one yard—Newport News—produces nuclear-powered aircraft carriers. Therefore, the Navy has no extra capacity to build carriers in the event of a natural disaster or even a nuclear mishap. That situation existed even during the Cold War when the threat was greater. Arguably, with the decline of the threat from Russian submarines in the post Cold-War world, producing submarines might be less critical than producing carriers, given the shift in U.S. naval strategy to projecting power ashore in coastal areas and the need for weapon systems that provide maximum capability in those areas. Therefore, one shipyard capable of producing carriers and submarines might now be sufficient.

More important, Newport News has a maximum capacity to build at least four submarines per year. In the long term, assuming that the average expected life of a submarine is 30 years, the capacity to build four submarines a year could support a steady-state force of 120 attack submarines—a fleet exceeding that of the later Cold War years (a maximum of about 100 ships). Thus, the capacity to build four submarines a year would meet most plausible scenarios postulating a resurgent submarine threat.

Finally, although Electric Boat designed the power plants for 18 of the last 19 classes of submarines, Newport News designed the power plant of the modern *Los Angeles* (688) class submarine that is still in production. If Electric Boat's design capability is a major reason the Navy continues to operate the shipyard, perhaps a more economical solution is to retain that function and close the production facilities.

CONSOLIDATION VERSUS COMPETITION

According to the Navy, another risk of consolidating production at one shipyard is that it might eliminate the possibility of future competition to build submarines. Currently, however, no competition exists to build submarines because the Navy plans to allocate the design and production to Electric Boat for the foreseeable future. The Navy maintains that its plan to allocate production of the third *Seawolf* and the design and production of at least the first NAS vessels to Electric Boat was necessary. By way of explanation, it claims that building submarines at an average rate below two per year initially would not sustain competition between two shipyards. But sometime after the turn of the century, the Navy hopes to increase production to two ships per year; it argues that a competition might then be held. The potential for future competition, it contends, ensures leverage over Electric Boat to keep the cost of the ships down in the interim.

Newport News maintains, however, that if the Navy continues to designate Electric Boat to build submarines while it builds none, its capacity to produce them will erode. Therefore, in the future, the Navy would continue to incur the fixed costs of two nuclear-capable shipyards—one capable of producing carriers and one capable of producing submarines—without reaping the cost savings of having two potential suppliers of submarines. Thus, the Navy's current plan might leave it without the possibility of generating competition in the future and the leverage to hold costs down in the interim.

Furthermore, prospects for competitive procurement of submarines either now or in the future are questionable. First, the Navy may never produce submarines at two per year. Even though the NAS is being advertised as a low-cost successor to the *Seawolf*, the first ship of the class is projected to cost $3.3 billion to procure. That price is about $900 million more than the third *Seawolf*, which costs about $2.4 billion. Although the cost of the lead ship in any class is greater than follow-on vessels, and the Navy eventually hopes to get the unit cost down to $1.5 billion, it may have difficulty closing such a wide gap. If the Navy cannot reduce unit costs substantially, it may not be able to afford to produce two ships per year.

Second, according to an analysis by the Congressional Research Service (CRS), even if two submarines a year are produced, sustaining competition between the two shipyards may not be realistic. For fiscal years 1994 and 1995, the Navy decided that a production rate of three ships a year would not sustain competition between the two shipyards producing DDG–51 destroyers without risking their financial health. Therefore, prospects would be limited for competition for submarines at an even lower rate of production.

The CRS analysis also notes that even if competition for submarines could be sustained, the Navy might not necessarily save money. The inefficiencies from splitting the production learning curve between the two shipyards might more than offset the savings from competition. The analysis suggests that to avoid the added expenses of dividing a small purchase of submarines between two shipyards, a winner-take-all competition for multiple ships or the entire NAS purchase could be held. In that instance, a one-time competition, rather than Government industrial policy, would decide whether one or two nuclear-capable shipyards remained. In question is whether a shipyard would bid extremely low to win the contract and then raise the price after the losing shipyard left the submarine production business. Also, would the long-term savings from a winner-take-all competition exceed any short-term costs to the Government to "level the playing field" between the two shipyards? CBO's ongoing study will analyze that issue quantitatively.

The CRS analysis lists some of the actions that might be needed to make competition more equitable. The Navy might have to fund a *Seawolf* or some other new submarine construction project in 1996 at Newport News as well as Electric Boat to ensure that Electric Boat did not enjoy an advantage. (Newport News maintains, however, that it could resume submarine production in 1998 if it was given some submarine overhauls and repair work now performed by the Navy's shipyards.) The analysis suggests that if no new construction project was funded at Newport News, the shipyard's reconstitution costs might have to be considered during the bidding.

In addition, because Electric Boat is designing the NAS to be produced at its facility, the analysis notes that Newport News would have to be allowed to observe or participate in the design process and that the design would have to be modified to permit Newport News to produce it. As noted earlier, the Navy estimates that altering the design would cost about $200 million and delay the NAS program by 2 to 4 years. However, Newport News argues that the extra costs and time are negligible.

In short, with competition, the possibility exists that the Navy could spend substantial amounts of money to level the playing field. Whether long-term savings from competition would exceed those amounts is unknown. Also, of course, if the competition was winner-take-all and Newport News won, the Navy would end up with only one shipyard that could produce nuclear-powered ships anyway.

REALLOCATING WORK FROM THE PUBLIC SHIPYARDS

If consolidating production at one shipyard—either by an industrial policy or as a result of competition—was thought to be too risky, both shipyards could be kept open with work reallocated from the four public shipyards that are nuclear capable. Reallocating some submarine overhauls from public to private shipyards would allow the private yards to spread overhead among more contracts, help keep their skilled workforces more efficiently employed, and eliminate excess naval industrial capacity as some of the public yards were reduced or closed.

CONCLUSIONS

Canceling construction of the third *Seawolf* submarine and consolidating the production of all nuclear-powered ships at Newport News would almost surely generate both near-term and long-term budgetary savings. Canceling the third *Seawolf* would save about $1.5 billion in 1996, reduced by $500 million in future expenses. The third *Seawolf* is not needed to meet overall goals for the attack submarine force: the Navy is reducing the number of attack submarines from 84 in 1995 to its force goal of between 45 and 55. Although the *Seawolf* is an excellent submarine in many respects—it can carry considerably more weapons than a *Los Angeles* class submarine and achieves new standards in quietness—DOD leaders have already determined that it is too expensive to buy in quantity. They initiated the NAS program to develop a submarine that is equally quiet, but smaller and cheaper to produce. By 2012, enough of those new submarines will be built to meet the JCS's goal of 10 to 12 very quiet submarines without adding a third *Seawolf*.

As for consolidating production of nuclear-powered ships in a single shipyard, it would very likely generate long-term savings. However, the amount of savings is in dispute. Newport News estimates that consolidating all construction of nuclear ships at its shipyard would save the Government $7.6 billion between now and 2012. The Navy estimates savings at $1.3 billion over that period. (Both estimates assume a third *Seawolf* is not built.) CBO has not completed its own estimate, but it will probably fall between those two amounts.

The limited number of purchases of nuclear-powered vessels in the Navy's current plan makes consolidation an attractive option from an economic standpoint. Current Navy plans call for producing one aircraft carrier every 4 years, starting in 2002, after a 7-year gap from the CVN–76 authorized in 1995. Over that same period, the Navy would build the NAS at a rate of no more than two submarines a year. At those low rates of production, paying the overhead costs associated with two separate shipyards is not very economical. A single, larger shipyard would have the advantage of shifting workers between carrier and submarine production as needed.

Allowing both shipyards to continue to compete for submarine contracts appears to be problematic, as long as the Navy plans to acquire the NAS at no more than two a year. Keeping both yards open and active to support a yearly competition might be more expensive than buying submarines from a single yard: it would require the Navy to pay the overhead on two sets of underused facilities and to incur costs to level the playing field between the competitors to ensure a fair competition.

As an alternative strategy, the Navy might be able to conduct a winner-take-all competition for multiple ships or even for the entire NAS program. If won by Newport News, such a competition would have the same effect as directing consolidation. If won by Electric Boat, it could lead to the same result as the administration's current plan, but with the attendant delays and additional costs associated with mounting a fair and open competition. CBO will address the issue of the potential gains and costs of competition more thoroughly when it issues its study.

Senator WARNER. May I ask, could the committee be supplied a copy of the brief summary that you just read from?

Dr. WILLIAMS. Absolutely.

Senator WARNER. And I would ask that that be duplicated now so that we can have it for purposes of our questions.

Dr. WILLIAMS. Yes, sir.

Senator COHEN. Mr. Davis.

STATEMENT OF RICHARD DAVIS, DIRECTOR, NATIONAL SECURITY ANALYSIS, NATIONAL SECURITY AND INTERNATIONAL AFFAIRS DIVISION

Mr. DAVIS. Thank you, Mr. Chairman. If I could have my prepared statement put in the record, I will just make some observations.

Senator COHEN. We will include it in the record, and we will even supply a copy to Senator Warner.

Mr. DAVIS. Much of what is in my statement has been said by the two people that preceded me, so I would just offer a few comments.

There are a couple of things in our statement that have not been said before. We have done some evaluation to look at other alternatives that the Navy might proceed with other than their current plan of buying submarines.

We talked about those different alternatives in a report that we issued last year. And all those alternatives provide different levels of savings.

The second major point that I would like to make, there was some discussion about this in the morning, and that gets to the whole issue of what is the threat and what is the intelligence assessment.

And while there is agreement within the intelligence community in terms of what the Russian technical capabilities are in terms of their new advanced submarines, there is a lot of disagreement within the intelligence community about some other very important issues related to that very same subject.

Senator MCCAIN. Which is what I was trying to get at this morning.

Mr. DAVIS. Yes, sir.

Senator COHEN. Is that something that is open or classified?

Mr. DAVIS. We can talk to some of that today, which I think would be helpful. Some of the details, of course, are classified.

Senator MCCAIN. Would you pursue that a little bit, the open part?

Would that be all right, Mr. Chairman, in his opening statement?

Senator COHEN. I think he is going to. Let us let him finish what he was going to say.

Senator MCCAIN. Were you going to do that?

Mr. DAVIS. I can do it now or I can respond to questions.

Senator MCCAIN. Why do you not do it now?

Mr. DAVIS. Okay.

Senator WARNER. And then, Mr. Chairman, if there is some classified material, does the Chair plan for us to receive that in a subsequent opportunity?

Senator COHEN. I would anticipate doing that in a separate briefing.

Mr. DAVIS. The problem being, of course, is that anything classified is not part of the public debate. That is why the unclassified information, I think, is so important.

Senator MCCAIN. Well, I share your view.

Mr. DAVIS. We are hoping to summarize our comments in a classified report, but we do not think it can be unclassified and provided to the committee in time for their views.

I will say a few things——

Senator COHEN. There will be plenty of time for you to supply it before the committee for its use. This is not going to be concluded in a matter of days.

Mr. DAVIS. Okay. Fair enough.

Again, at the expense of repeating, the Office of Naval Intelligence (ONI) has put out this report that Senator McCain referred to earlier this morning.

There is quite a bit of agreement within the intelligence community about the Navy's intelligence community's assessment in terms of the technical capabilities of the Russian submarines, in terms of the new submarines.

Having said that, there is a lot of disagreement within the intelligence community about things like Russian defense spending priorities; in other words, questions about how much will defense get within the Russian budget, within the defense budget how much money would be allocated to the Navy, within the Navy how much money would be allocated to the submarines, et cetera.

The ONI report implies and suggests that a lot of the money is going to go to Navy submarines. There is a disagreement within the intelligence community that that interpretation is accurate.

Senator COHEN. They do in fact know what the production levels are now; do they not?

Mr. DAVIS. There is some knowledge about that, yes.

Senator COHEN. Not some, they have some pretty good numbers in terms of what is being produced.

Mr. DAVIS. Right. Regarding the whole issue about operating tempo, there is not a lot of agreement about—there are a lot of differences within the intelligence community about issues dealing with training, maintenance, and morale of the troops.

And if I could just highlight one particular point out of the report, for example. They talk about the Russian submarine force returning to form.

And there is a statement in here that says operationally the Russian submarine force is demonstrating a renewed commitment to spending quality time at sea both in local training and in conducting combat patrols and long-range deployments.

There is a lot of disagreement about those issues in terms of whether or not there is quality training and getting the maintenance done on their ships.

Another very, very important point concerns the whole issue of the Russian future force structure. There is not agreement within the intelligence community as to what that force structure might be.

And that is very important, especially as it relates to what the number of SSBNs might be, because that also impacts the number of attack submarines that the——

Senator COHEN. Is that not also being driven, however, by the SALT and START agreements?

Mr. DAVIS. We are not so sure about that.

Senator COHEN. Well——

Mr. DAVIS. I would also point out that, and I think this is very significant, the DIA has written their own analysis of their thoughts concerning this paper, which shows there are differences.

Also I think it is worth pointing out in terms of the Bottom-Up Review, which also was discussed this morning. The DIA threat information that was given to the people that were involved in the Bottom-Up Review says one thing: Their assessment of the world's events today is quite different.

Senator COHEN. I am sorry. Would you speak a little——

Mr. DAVIS. The DIA's assessment of the Russian situation as they related it to the people that were involved in the Bottom-Up Review is one thing and their assessment of the conditions today is different than that. I think I need to leave it there.

Senator COHEN. Are you suggesting that they exaggerated it for the Bottom-Up Review and are minimizing it today or vice versa?

Mr. DAVIS. No, I am suggesting that the information they provided at the time could very well have been very accurate. And their assessment today——

Senator COHEN. Could also be very accurate?

Mr. Davis—could be very accurate, but it is different. I am not suggesting any cooking of the books here at all. I am not suggesting that.

I would just like to maybe—and I can respond to other questions in questions and answers, but I would just like to conclude my remarks by picking up on some of the comments that you made earlier, Senator Cohen.

And at the risk of trying to put words in your mouth, I tried to jot down how you summarized when the first panel finished. And I think——

Senator COHEN. Will you repeat it? I cannot remember it. [Laughter.]

Mr. DAVIS. Well, I think I have the essence of the questions that you thought that the subcommittee had to deal with.

Senator COHEN. Well, I was going to point out, when you said you were going to summarize my remarks, I think my remarks were in the form of questions.

Mr. DAVIS. Right. And you put the questions on the table such as: do we need two bases, do we want two bases, can we afford two bases. And lastly you said: do we want to override the Navy and DOD who are suggesting that maybe we should have two bases.

Senator COHEN. Right.

Mr. DAVIS. And if I could offer some thoughts on those questions. I think first I would like to look at the question of do we need two shipyards. Of course, how we define need in terms of—and we may all look at that a little bit differently.

But in terms of need, in terms of being able to provide submarines, I do not think there is any question out there that either one of the two yards in question have sufficient capacity and capability to build the number of submarines that the Navy sees needing in the future.

Do we want two shipyards? And I would submit that that is a judgment that has to be made based on a lot of factors. Can we afford two shipyards?

And I think I would like to echo the comments that I heard Senator McCain make this morning, and I think I also heard Senator Lieberman make, and they talked about the issues of priority and choices.

And I think that is where we are today in terms of can we afford two shipyards. Clearly we can afford it, it is in the budget and so forth, but it is a question of how we spend our money or are these the choices that we want to make. But again I think that is an individual situation.

And do we want to override the Navy and DOD plan? But I think in summary when you get it all done, I see the issue as one of cost and affordability versus the risk and how comfortable you are with the risk.

And the Navy's judgment was, and they testified this morning with Ms. Slatkin's slides, about the cost, and she used the $1.3 billion; she referred to 3 percent.

It is the Department of Defense's judgment and their decision that they are willing to pay that cost for what they see as a potential risk. That is a judgment that they have made, a policy choice.

That concludes my comments.

Senator COHEN. And, of course, to make it a little more confusing than that, or complex than that, it is a cost that is unknown, or at least undetermined at this point, that they are willing to bear in order to minimize the risk. And that is something that we have to sort through.

Mr. DAVIS. Yes, sir.

[The prepared statement of Mr. Davis follows:]

PREPARED STATEMENT BY RICHARD DAVIS, DIRECTOR, NATIONAL SECURITY ANALYSIS, NATIONAL SECURITY AND INTERNATIONAL AFFAIRS DIVISION, U.S. GENERAL ACCOUNTING OFFICE

Mr. Chairman and Members of the subcommittee: We appreciate the opportunity to be here today to discuss issues associated with continued production of nuclear attack submarines. I will summarize our three main points and then discuss the specifics.

— First, there are less costly alternatives than the approach the Navy has chosen to maintain the required SSN force structure. As we recently reported,[1] these alternative approaches would save billions of dollars and meet the Navy's force structure and threat retirements. The SSN–23 is not needed to satisfy force structure retirements or to provide the 10 to 12 *Seawolf* quiet submarines required by the Joint Chiefs of Staff by 2012, because of the New Attack Submarine. Instead, the Navy's justification for its two nuclear capable shipbuilder strategy was to preserve the benefits of competitive leverage and the option for future competition when production rates are stable, to provide a hedge against future uncertainties, and to prevent the irreversible consequences of losing a shipbuilder.

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[1] *Attack Submarines: Alternatives for a More Affordable SSN Force Structure* (GAO/NSIAD-95-16, Oct. 13, 1994).

— Second, there is agreement within the Intelligence Community that Russia's frontline submarines are for the first time as quiet or quieter in some respects than the SSN–688I and Russia plans to continue reducing radiated noise level on its submarines. However, there is disagreement about a number of issues including Russia's ability to operate the new quieter systems effectively, Russia's defense spending priorities, Russia's ability to maintain its operating tempo and readiness and maintenance levels, and the future Russian force structure levels and production programs.

— Third, we agree with Newport News Shipbuilder's basic economic concept that consolidation of work at one shipyard rather than operating two shipyards at less than production capacities should result in savings. However, because of the lack of time and adequate information, we could not validate Newport News Shipbuilding's analysis of the cost benefits of consolidating submarine and aircraft carrier construction at one shipyard compared to the Navy's two shipyard building program. Moreover, we noted several questionable assumptions and computational errors in Newport News' analysis that result in higher estimates of efficiency savings than the Navy would realize from consolidating construction at one shipyard.

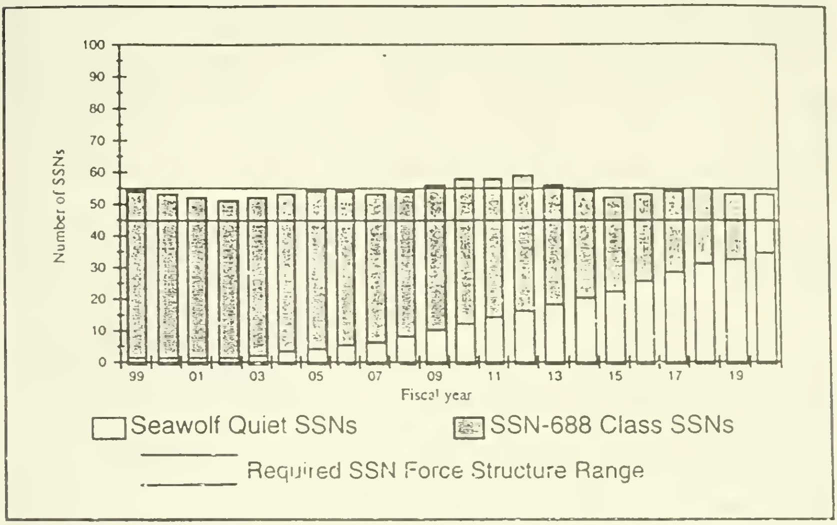
BACKGROUND

In October 1993, the Department of Defense (DOD) issued its Bottom-Up Review—an assessment of U.S. defense needs in the post-Cold War dictated the U.S. defense strategy, doctrine, force structure, weapons, and defense budgets is gone.

As for the Navy's attack submarines, the review decided that (1) a force of 45 to 55 submarines would be needed to meet the retirements of the U.S. defense strategy, for both regional conflicts and peacetime presence operations; (2) Electric Boat shipyard in Groton, CT, would build the third *Seawolf* submarine (SSN–23) to bridge the projected gap in submarine production; and (3) the Navy should develop and build a new, more cost-effective attack submarine than the *Seawolf* beginning in fiscal year 1998 or 1999 at the Electric Boat Shipyard. DOD believed that with this approach, it would maintain two nuclear capable shipyards and mitigate the risk to the industrial base.

To reduce its SSN force of about 85 submarines to the maximum of 55 by 1999, the Navy plans to retire its pre-SSN–688 class submarines and 10 of its older SSN–688s, while taking delivery of the 7 SSN–688Is and 2 *Seawolf* submarines currently under construction. To maintain an SSN force of 45 to 55 submarines, the Navy plans to begin building 31 SSNs between 1996 and 2014 at an estimated procurement cost of $48 billion. This approach allows the Navy to maintain an SSN force structure close to the maximum of 55 SSNs through 2020, as shown in figure 1.

Figure 1: Effects of Navy's SSN Shipbuilding Plan on SSN Force Levels (1999-2020)



ALTERNATIVES TO THE NAVY'S SHIPBUILDING PLAN ARE LESS COSTLY AND MEET DOD'S NEEDS

In October 1994, we reported that there were less costly alternatives than the Navy shipbuilding plan for maintaining DOD's approved attack submarine force structure of 45 to 55 submarines. Under two of the three alternatives, the Navy could maintain a sustained low-rate production, and under the third, the Navy could defer SSN construction until early in the next century.

Under our first alternative, the Navy would build only 25 SSNs through 2014—6 fewer than planned. This alternative saves the Navy $9 billion in procurement costs and allows a force structure of close to 55 submarines through 2014, before declining to 45 SSNs in 2020. This alternative would never require funds for more than two SSNs per year through 2014. Beyond 2014, it would require managed procurement of no more than three SSNs per year.

Under our second alternative, the Navy would extend the service of 9 refueled SSN–688s and build 14 fewer submarines than planned. This approach saves about $17 billion in procurement costs after accounting for the third overhaul of 9 submarines. It also allows the Navy to maintain a force structure of about 55 SSNs through 2015, before declining to about 45 in 2020.

Under our third alternative, the Navy would defer new SSN construction. This reflects the Secretary of Defense's February 1994 testimony that DOD has no force structure need to build new submarines until after the turn of the century. New SSN construction could be deferred because the Navy can maintain the minimum 45 SSN force structure with its current fleet until 2012. This deferral could free up billions of dollars in the near term. We also analyzed an alternative which deferred construction until 2003 and reduced the number of SSNs built by 6. This again saves about $9 billion in procurement costs through 2014 and also defers an additional $9 billion in planned construction funding from 1996 to 2002. However, these deferred savings would be offset somewhat by reconstitution costs, which have been estimated by Rand[2] and the Navy to range from $800 million to $6 billion.

The JCS wants 10 to 12 submarines as quiet as the *Seawolf* by 2012 for the anti-SSBN and presence missions anticipated in that timeframe. With either of our first two alternatives, the Navy could meet that need without building the SSN–23, but if the Navy deferred attack submarine construction to 2003, it would not have 10 to 12 *Seawolf* submarines before 2014.

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[2] *The U.S. Submarine Production Base: An Analysis of Cost, Schedule, and Risk for Selected Force Structures,* RAND (Santa Monica, CA., 1994).

INTELLIGENCE COMMUNITY VIEWS ABOUT RUSSIAN SUBMARINE ISSUES DIFFER

The Office of Naval Intelligence (ONI) recently issued a report, entitled Worldwide Submarine Proliferation in the Coming Decade, which discusses the improvements in and growing numbers of foreign submarines.

There is agreement within the Intelligence Community that Russia's frontline submarines are for the first time as quiet as or in some respects quieter than the SSN-688I and Russia plans to continue reducing the radiated noise level on its submarines. However, there is disagreement about a number of issues including Russia's defense spending priorities, Russia's ability to maintain its operating tempo and readiness and maintenance levels, and the future Russian force structure levels and production programs.

While there is agreement about the technical capabilities of fourth generation Russian submarines and their components and subsystems, there is disagreement on the extent to which these technical capabilities can be incorporated into the operational force and on the ability of Russian crews to operate these new systems effectively.

The ONI report does not address other factors that should be considered in determining the overall superiority of U.S. and Russian submarines, such as sensor processing, weapons, platform design, tactics, doctrine, and crew training. This omission is significant, because, according to the Navy, considering these factors along with acoustic quieting is essential to determine the overall qualitative advantage of U.S. versus Russian submarines.

Public reports, news accounts, and more importantly other DOD publications—including the annual Director of Naval Intelligence Posture Statement—present other information on some of the factors that affect submarine superiority. For example, these reports note a decline in the operating tempo of Russian submarines, order of battle, and construction programs. They also note that morale and discipline have deteriorated, personnel shortages are serious, and the frequency and scope of naval operations, training, readiness, and maintenance have declined.

NEWPORT NEWS' CONSOLIDATION SAVINGS ESTIMATES ARE QUESTIONABLE

At the request of the Chairman, Subcommittee on Military Procurement, House Committee on National Security, we provided comments on Newport News Shipbuilding's analysis which was designed to demonstrate the cost benefits of constructing future submarines at their shipyard versus the costs of the administration's two shipyard strategy. The analysis basically compared the costs of two options: (1) Electric Boat (which builds submarines) and Newport News Shipbuilding (which builds carriers) would both remain open but operate at less than their production capacities, and (2) the construction and maintenance of submarines and carriers would be consolidated at Newport News. The analysis presents cost benefits from consolidation ranging from $8.1 billion to $10.9 billion for the projected 30-submarine construction program.

Our assessment of the analysis was hampered by a lack of time and adequate information. For example, we lacked input from Electric Boat, data to verify the Newport News model's assumptions, and backup data to determine the accuracy of Newport News' estimated overhead costs, labor hours, labor rates, and the cost of materials. Nonetheless, we agree that the Navy should save money if its shipbuilding work is consolidated at one shipyard. The Navy also agrees that a consolidation would reap savings and recently estimated the savings at $1.3 billion. While there may be agreement that consolidating submarine and aircraft carrier construction at one shipyard could save money, there is no similar consensus on how much could be saved.

We noted several questionable assumptions and computational errors in Newport News' analysis that change the estimates of efficiency savings the Navy would realize in each of the alternatives. Several of the Newport News model's assumptions concerned us because we believe they skewed the projected savings.

1. Estimates of efficiency savings from the consolidation were based on assumptions about Electric Boat's costs—material, labor, and overhead—that may not accurately reflect true costs.

2 Estimates of labor hours required to build 30 new attack submarines at Electric Boat and Newport News Shipbuilding were based on several assumptions that may not be valid.

3. Estimates of certain cost savings or avoidances may be overstated.

By consolidating the construction of nuclear carriers and submarines at one shipyard, the Navy could realize budgetary savings Newport News did not account for in its analysis. The Navy could accrue such savings by adopting a ship construction strategy that considers the timing of maintenance and construction of these vessels to maximize production efficiencies. In essence, the Navy could build carriers when needed to maintain the force structure rather than to provide Newport News Shipbuilding with a minimum sustaining workload. For example, under this option, construction starts may vary anywhere from 3 to 10 years apart. Savings would result from such factors as improved workload efficiencies and the avoidance of premature carrier retirement costs.

This concludes my statement. I will be happy to answer any questions you may have.

Senator COHEN. I guess I am first. I have been asking you all questions.

For the time being, Senator Warner, would you like to go?

Senator WARNER. Thank you, Mr. Chairman.

Mr. McCain, can I accommodate you? I am going to stay if you would like to lead off.

Senator MCCAIN. Can I just ask some questions?

Senator WARNER. Yes; surely.

Senator MCCAIN. I thank you, Mr. Chairman.

I am supposed to speak in about five minutes upstairs. I am sure they will not miss much if I am not there.

Dr. Williams, do you believe that the third *Seawolf* submarine is necessary to meet the 45 to 55 attack submarine force as well as the JCS requirement for 10 to 12 attack submarines by the year 2012?

Dr. WILLIAMS. No, I do not. I agree with both the CRS and the GAO analyses on that.

Senator MCCAIN. That it is not necessary to——

Dr. WILLIAMS. That it is not necessary to meet the force structure goals.

Senator MCCAIN. Do you know, Dr. Williams, there is a significant difference of opinion between you and the Pentagon on how much would be saved over by virtue of terminating the third *Seawolf* submarine?

Dr. WILLIAMS. Yes, we understand that. And we actually got some new insights into the Pentagon data today in this hearing that we did not have before. It has been difficult for us to understand the components of the Navy's estimate of savings, but we think our savings estimate is right.

Senator COHEN. Excuse me. In spite of the new information you have?

Dr. WILLIAMS. Absolutely; yes.

Senator COHEN. Okay.

Senator MCCAIN. Mr. Davis, you lay out a scenario that the Navy could extend the service life of 9 SSN–688s and build 14 fewer submarines than currently planned.

This approach would, according to your estimate, save about $17 billion in procurement costs after accounting for the cost of refueling the 9 submarines. Does the Navy not agree with your cost estimates? And why do you believe the Navy is not pursuing this possible alternative?

Mr. DAVIS. A couple things. First of all, in our report we laid out different alternatives that the Navy might be able to pursue as a way of carrying through and building the force structure they want.

The Navy's plan is to build 30 submarines, the new class, and they are going to stay at the high end of the 45 to 55.

We were trying to see if there were other ways they could go about doing that, and this is one way. When the Navy commented on our report, they said that it was too early to judge whether or not they could make some decisions about whether or not they could extend the life of a submarine by looking at some of the issues dealing with structural integrity and so forth.

And at the time we issued the report they did not have any plans to do that, but they said it was feasible and at the time that they might think about doing that.

Senator MCCAIN. Mr. Chairman, we have covered these issues pretty well, but Dr. Williams and Mr. Davis have both stated that the Navy could complete its requirements with one shipyard rather than two in operation building nuclear submarines.

Does that mean that there is any argument for maintaining two shipyards, Dr. Williams or Mr. Davis? Or as you said, it is just a matter of whether you have enough money or not?

Dr. WILLIAMS. I think the only arguments are the intangibles at this point, such as the belief that you need two shipyards because you want to be protected in case there is a nuclear mishap or disaster.

If you believe that you could sustain competition at some point in the future, if you believe these intangibles, then you will say it is worth keeping two yards open.

But to keep two yards open because that is the amount of capacity that you would need, no. I cannot foresee the situation in which you would need the amount of capacity that you would get from two yards.

Mr. DAVIS. Clearly they do not need it for force structure reasons. Clearly they do not need it for threat reasons. They argue that they need it for this hedge. It is a question that you are going to pay. They are asking the American people to pay money for excess capacity in case something happens.

I heard Newport News testify this morning that if they do not get in the competition they are going to be out of the submarine business pretty soon.

Whether or not you believe them or not, if that is true, then I do not see where this leverage they are getting in terms of preserving competition in the future, I do not know where that comes in because Newport News said they will not be around.

Senator MCCAIN. Thank you.

I thank Senator Warner.

Mr. Chairman, I just want to mention again, I do not believe that a rational evaluation of what the Russian military is facing today would in any way lend any credence to the belief that they are placing their highest priority in nuclear attack quiet submarines.

There is nothing in that chaotic military situation they face, the borders are fraught with unrest and with internal fighting where their military has shown up very poorly, that would indicate in any way this would be the very highest priority.

And that is why I hope we can get more and more unclassified information concerning our estimates of what the Russian priorities are because it is senseless to believe that they somehow think that

that is the kind of priority that would indicate the investment of such huge amounts of money.

And I hope we can get more unclassified information as this debate unfolds, because as nice to know as classified information is, it does not help us in the course of the debate.

I thank you, Mr. Chairman.

Senator COHEN. Senator Robb, I am going to yield to you.

Senator ROBB. Thank you. I will be very brief because I am going to run off very quickly too. Thank you, Mr. Chairman.

Just for point of clarification, Mr. Davis, I am not certain that I heard you correctly, but you said something, I thought, to the effect that neither of the yards had the capacity or ability, I do not remember the word that you used, to build the number of submarines required, or something to that effect.

Mr. DAVIS. If I said that, let me correct the record.

Senator ROBB. If you would, because that seemed to be inconsistent with everything else that I heard. I just wanted to make certain what I heard was in fact not correct, or what I thought I heard.

Mr. DAVIS. What I meant to say is that both yards do in fact have the capability to build the number of submarines the Navy needs.

Senator ROBB. Okay. That——

Mr. Davis—to build the——

Senator ROBB. Thank you. That is what I thought was undisputed, and I just wanted to make sure what you said on that.

One other quick question for any of the panelists, because we look to you as outside experts, disinterested presumably.

With respect to how you allocate overhead, would any of you give a brief description of the kinds of costs that are appropriate to include in fixed overhead?

I do not mean the specific dollar amounts, but just a very brief verbal description of what is appropriate to include in fixed overhead and what is appropriate for the kind of overhead that would be dependent upon the amount of work that a yard had at any given moment; just some guidance as to what we should look to or for.

Mr. DAVIS. Well, very briefly, I think, for example, one example of fixed overhead would be depreciation. Some of the variable overhead would be the expenses you pay for the fringe benefits and so forth that you pay to your employees. And that would vary depending on the number of employees you would have.

Senator ROBB. Would others differ from that, add or subtract anything from that?

Mr. O'ROURKE. There are somewhat varying definitions of fixed and variable overhead according to what books you want to consult, but usually fixed overhead is defined as including depreciation on your current facilities, rent, maintenance on those facilities, security, central administrative costs for the entire company.

Variable overhead costs are more the labor-related overhead costs, the fringe benefits and so on that were mentioned.

Dr. WILLIAMS. I think one problem that we are all having in looking at the estimate that Newport News provided us is that costs swing back and forth between fixed and variable, and they can surprise you when you are in the middle of a downsizing an expansion. What at one point you thought was fixed overhead, such as rent, can actually turn into variable overhead if you are in the middle of a downsizing because all of a sudden you are getting rid of facilities that you have been renting.

That is one of the things we have been struggling with in looking through some of these estimates, is that there are differences of opinion; not just differences of definition but differences of opinion about how quickly either of the companies is able to downsize or to upsize, in the case of Newport News case, for some of the added work that they are talking about taking on.

Mr. O'ROURKE. If I could add to that. One of the things that you come across quite frequently is the notion that fixed costs, what we refer to as fixed costs, are fixed only in the short term.

In the long term you can alter your fixed costs to some degree. And that has to do with the size of your facility. And this is the process that both of these shipyards earlier today testified that they are going through.

So fixed costs are fixed for that year, but they can be altered to some degree over the long run. Also there can be a difference in terms of overhead allegation between a multi-product yard like Newport News and a single-product yard like Electric Boat

Senator ROBB. That was going to be my follow-up question. In terms of a mix between government and commercial work is there any hard and fast rule that you would use in allocating what percentage of overhead goes to each contract, particularly the fixed as opposed to the variable?

Mr. O'ROURKE. I think the shipyards would probably be in a better position. They have to probably be in accordance with certain generally accepted accounting procedures.

But where it is Navy or non-Navy or simply multiple Navy programs, which Newport News has, even not including the commercial work, Newport News is in a position where it can allocate overhead to one program or another; whereas, Electric Boat is really a single-product yard.

So things that a multi-product yard might consider to be overhead are things that a single-product plant like Electric Boat might consider to be a cost directly attributable to that one and only program and they might bill it more as a direct cost.

So when you look at presentations on the cost structures of the two yards, the fact that one is a single-product yard and the other is a multi-product yard can actually lead to honest differences between the two yards in how they define and structure their costs.

Senator ROBB. But you would be in a position to make some judgment as to when we are looking at it from the national defense and a taxpayer interest which reflect a better value for the end-user?

Mr. O'ROURKE. If you are asking is the point of position to provide the overall answer to the question of the two yards versus one, I think that we have all tried to go as far with that question as the limits on proprietary information will allow us to do so at this hearing.

I do think the Newport News submission is sufficient to gain an understanding of what they believe to be fixed costs of the other yard. And as I testified earlier, I do not believe that Newport News has overestimated those fixed costs.

Senator ROBB. You do not believe they have overestimated the fixed costs.

Mr. O'ROURKE. No, I do not.

Senator ROBB. Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Robb.

Senator Warner.

Senator WARNER. Thank you, Mr. Chairman.

Mr. Davis, back to you. In stating the reasons for the administration deciding to keep both of these yards, and I tried to copy it down, to provide an excess in case something happens. What are those somethings that happen?

Mr. DAVIS. I think DOD talked about, one, there could be a——

Senator WARNER. How about Beirut, Oklahoma?

Mr. DAVIS. I am sorry?

Senator WARNER. How about Beirut, Oklahoma?

Mr. DAVIS. It could be something like that. It could be sabotage. It could be some sort of catastrophic event. It could be——

Senator WARNER. This is kind of important stuff. And this is just—what are you talking about, a nuclear attack by the Russians on these two facilities?

Mr. DAVIS. I can only surmise based on what their statements have been. But they are talking about a hedge against somebody—if you put all your eggs in one basket, somebody coming in and disrupting the yard so that it——

Senator WARNER. You mean bringing a suitcase device into proximity to Newport News Shipbuilding dry dock and incapacitating the yard? Is that what you mean?

Mr. DAVIS. I think that the question is better presented to DOD, but I think that could be one possibility. I think the other thing that they are talking about is——

Senator WARNER. If they bring a suitcase there, they can take a suitcase up to the other one too. I mean, just two suitcases. So I cannot buy off on this.

Mr. DAVIS. I think that is where it comes in terms of a judgment, in terms of what you are willing to——

Senator WARNER. As much as you know about it, it is something in the nature of——

Mr. DAVIS. Well, I think the other thing that they hold out also is the potential change in the security environment of the world, whether or not it be Russian or some other country out there could eventually pose a threat to us.

Senator WARNER. Some type of naval seneschal which threatens our security and that of our allies. Is that what you mean?

Mr. DAVIS. Could be.

Senator WARNER. Well, in that case, did any of the panelists look at the comparative surge capability of the two yards? In other words, let us say that scenario did occur which drives the Department of Defense to larger submarine numbers.

Which yard is better capable of surging, let us say under today's condition? Now, if Newport News goes out of the submarine business and their dry dock is covered with cobwebs, forget it.

Mr. O'ROURKE. It seems to me——

Senator WARNER. In my visit to the yard that if a surge capacity happened in the next 3 or 4 years, Newport News is far more capable of reaching a surge capacity——

Mr. O'ROURKE. If what is your are asking is what are the comparative capacities of the two yards, Newport News has testified recently that they are capable of four boats per year using their existing facilities.

And when they say that they are quoting only the figure for their modular outfitting facility. They could actually sustain even higher rates if they brought some of their grading docks into production use——

Senator WARNER. Right.

Mr. O'ROURKE. Although doing so would result in less efficient submarine production for the submarines made in those grading docks.

Senator WARNER. How does that compare with Groton?

Mr. O'ROURKE. Groton has not testified recently on its maximum——

Senator WARNER. But have they——

Mr. O'ROURKE. But the last available figure for Groton was three ships per year. So if you wanted to summarize it, it would be one yard at three ships and the other at four ships per year.

Senator WARNER. So the greater is in the Newport News to meet any surge capacity if we went to the one yard.

Mr. O'ROURKE. Based on the information that we last have from both yards; although it can also be pointed out for Electric Boat that they can bring their incline building ways back into production. And if they did so, then that could elevate their number to something higher than three per year.

Senator WARNER. Mr. O'Rourke, how many scenarios was Newport News tasked to produce for the data?

Mr. O'ROURKE. Was that to me?

Senator WARNER. How many scenarios was Newport News tasked to provide the data for?

Mr. O'ROURKE. They were asked to provide data on eight separate scenarios, and they did provide data on eight separate scenarios.

Senator WARNER. What was the Navy's role in formulating those scenarios?

Mr. O'ROURKE. In the framework of analysis that I put forward as a tentative framework, I originally envisaged controlling for two different variables, one being the out-year procurement rate of the New Attack Submarine, the other being the amount of non-Navy work at Newport News.

And that could have generated either four or six or nine scenarios depending on how many values for each of those two variables you wanted to test for. We decided to test for two values for each of those two variables, which would have resulted in four scenarios.

The Navy came forward with a proposal to introduce a third variable to control for in the analysis, and that was a variation in the amount of carrier-related work at the yard.

It was decided that this should be incorporated into the framework of analysis with a lower and higher value. Consequently, the four scenarios that we were anticipating originally turned into eight scenarios, two times two and then another times two.

Senator WARNER. Mr. Davis, your statement indicates that despite not having any information from Electric Boat, cost savings would accrue if nuclear attack submarine construction were consolidated at Newport News as Newport News has proposed.

Would you discuss some of these savings and indicate why you determine that these savings would be realized?

Mr. DAVIS. I think it is kind of basic economics in terms of some of the consolidation. Right now, for example, there are two major issues. One major issue is overhead. And if you consolidate in one yard, the government does not have to pay fixed overhead rates at two yards.

Another very important issue is the assumption that Newport News made about labor rates. The assumption was that they could in fact build submarines for fewer labor hours than Electric Boat.

That was one assumption that gave us some concern, because we did not feel we had the wherewithal to judge whether or not that is a good assumption. And clearly that is very key to this whole analysis.

Senator WARNER. Dr. Williams, I will come back to you momentarily. I have read through your statement. As I was listening very intently, it seemed to me you used the word healthy in one context in here.

Dr. WILLIAMS. Yes.

Senator WARNER. Do you know which paragraph that was in, on what page? And I will come back to you.

Dr. WILLIAMS. I am at a disadvantage. You have my only copy.

Senator WARNER. I will be damned.

Here. All right. I will come back to you.

Mr. O'Rourke, the Navy's report maintains that the analysis of Newport News underestimates their overhead rate by assuming unrealistically high levels of commercial foreign frigate and Navy repair work. Did your analysis examine the load—I did not write this question.

Mr. O'ROURKE. I have a sense of where I think that question was leading.

Senator WARNER. I think I will come back to you. Did you find the word "healthy"?

Dr. WILLIAMS. I did find "healthy."

Senator WARNER. What page?

Dr. WILLIAMS. It is on the third page in the first paragraph. It is a discussion of the Navy's justification for purchasing the third *Seawolf*, which is that it would be a way of keeping the submarine industrial base healthy until production of the New Attack Submarine begins. And then I went——

Senator WARNER. My time is up, so I will defer to the Chair.

Senator COHEN. Go ahead.

Dr. WILLIAMS. Then in my statement I went on to talk about what CBO thinks healthy means. On the one hand, healthy means that you have a major supplier, but it also means that you have the component suppliers and the design house.

So I went through the question of design, whether the base for design would be healthy, and that was answered by the fact that the design work for the *Seawolf* is already done, so buying the third *Seawolf* does not buy you a healthier design base.

Then there are two types of components produced by the smaller vendors, the nuclear components and the non-nuclear ones. The nuclear components have largely been purchased already through the advance procurement money. So a continuation of the third *Seawolf* will not help them.

So the only people that are left to help using the third *Seawolf* are the non-nuclear vendors, and there are only a very few of those, according to the Navy and to RAND, whose processes are so specialized that they cannot stay in business by doing other work in an interim period.

Senator COHEN. If I could just add to that, however. If you were to conclude, as the testimony was earlier, that Electric Boat would start shutting down early next year if the third *Seawolf* were not completed, that does not allow you to keep a design team happy and healthy to compete on the front end under any circumstances.

So the notion that somehow you have already taken care of your design team and you have already taken care of your nuclear vendors really ignores the fact that if you eliminate the third *Seawolf* and you cancel out virtually any opportunity for the company to make a profit, they cannot keep a design team to compete for Newport News under any circumstances, right?

Dr. WILLIAMS. I might have thought that before I heard Mr. Turner's testimony this morning. But in his testimony I thought I understood him to say that if design were the only job left to them, then they would design. In other words, they would retain the engineering team and do the design work.

Senator COHEN. And shut everything else down.

Dr. WILLIAMS. Right.

Senator COHEN. That does not give you any nuclear vendors either, does it?

Dr. WILLIAMS. Yes, at the component level you would still have nuclear vendors.

Senator COHEN. With what money?

Dr. WILLIAMS. You are saying if——

Senator COHEN. What I am saying is——

Dr. WILLIAMS. If *Seawolf* were canceled.

Senator COHEN. Right. I am just trying to deal with the paragraph as I listened to it being read.

Dr. WILLIAMS. Yes. What I was saying was that nuclear vendors are either going to survive or not survive, but not based on whether that third *Seawolf* is produced because the nuclear component vendors have already collected the money for doing the work toward the *Seawolf*.

Senator COHEN. And they will stay around as long as they understand that there is more work coming, right? If they understand that there will be no more work coming they are going to evaporate tomorrow.

Dr. WILLIAMS. If they thought there were no New Attack Submarines coming at all?

Senator COHEN. Right.

Dr. WILLIAMS. Is that what you are saying?

Senator COHEN. In the next 3 or 4 years.

Mr. O'ROURKE. If I could interject just very quickly. The nuclear vendors are to be taken care of under the Navy's plan by the advance procurement money for the lead boat in the New Attack Submarine program. The intention of the Navy's plan is not to sustain them with the third *Seawolf*.

So whether the *Seawolf* stays or goes, that is not the issue for the nuclear vendors. The issue for the nuclear vendors is getting the AP money in this year's budget for the lead boat in the New Attack Submarine.

They have been sustained until now by CVN–76. It will be sustained over the next two years by the first ship's nuclear propulsion components for the New Attack Submarine.

Senator COHEN. Senator Lieberman.

I have other questions, but I will give you——

Senator LIEBERMAN. Thank you.

I do not want to go off on that, but I think Mr. O'Rourke may be talking about the nuclear power plant parts, but it is hard to believe that the first ship of the New Attack Submarine class could sustain a national vendor base of subcontractors without that, but let me go on to another point.

Just very briefly, on the whole question of the intelligence estimate of Russian capacity, it does seem to me though, Mr. Davis, you are obviously literally correct that there is some uncertainty about the future course of the Russian military, I do not think there is anybody who thinks there is any uncertainty about the fact that they do today have exactly what the Navy said this morning, six submarines out there that are quieter than ours.

And they also have a greater number of submarines, but that is not the most pressing point. The most pressing, troubling point to me is they have six quieter and they are continuing to produce.

And we are watching closely that rate of production. So I think the threat is still there.

But let me just go back to something that was part of my exchange with Mr. Fricks this morning. And my premise that the cost advantage, that the savings that Newport News is planning here is really a kind of cost-sharing because you are sharing it by getting other work.

At one point I thought I asked Mr. Fricks, is not his Newport News proposal contingent on receiving other work, including overhaul work from Naval yards, public yards.

And he said, "We are not doing any overhaul work today," which was not the intent of my question.

Perhaps it was not clear enough. I know that today the question is what is the future and what is the premise.

I just want to read into the record very briefly from the Navy report of May 1 estimate of the Newport News proposal. It said that the cost estimates do not include the extra costs and consequences to the Navy of providing Newport News with submarine engineering design and overhaul work Newport News states is necessary to avoid submarine start-up costs.

At a later point in that same report it says Newport News Shipbuilding March 1995 estimating methodology is as follows. And one of the elements of the methodology is workload projections are based on obtaining additional U.S. Navy repair work and carrier refuelings. It goes on: commercial, new construction, commercial repair.

But more to the point of this panel——

Senator COHEN. Senator Lieberman, would you identify what that is coming from?

Senator LIEBERMAN. This is coming from the Navy's May 1, 1995 report on submarine acquisition plan and assessment of shipbuilder proposal alternative plan.

And then in two of the pieces of testimony today, first Mr. O'Rourke's on page CRS 32, he says: the one time transitional cost effect—that is from the Newport News proposal—include but are not necessarily limited to the following.

And the last one of those is, "transferring submarine overhaul repair work to Newport News. This includes a direct change in the cost to the government of having this work done at Newport News Shipbuilding rather than at a Naval shipyard."

And then finally in Dr. Williams's report at page 15, the sentence says—I take it out of a paragraph. But I do not believe it is factually incorrect or out of context—"Newport News maintains, however, that it could resume submarine production in 1998 if it was given some submarine overhauls and repair work now performed by the Navy's shipyards."

So am I correct that part of the proposal of Newport News, at least as the two of you said, that I quoted from, does depend on some overhaul work from the Navy yards?

Dr. WILLIAMS. It was our understanding that such as transfer was part of what Newport News would require. They would require some overhaul work to get them back into the submarine business—basically, to sustain them in the same way that the *Seawolf* would sustain Electric Boat

Senator LIEBERMAN. Right. What I cannot find, I believe—I do not want to frustrate you, Mr. O'Rourke. I believe that Mr. Fricks actually made this statement in his testimony to the House committee, but I cannot find the text of it. I do not have it handy here.

What were you going to say?

Mr. O'ROURKE. Newport News has testified in the past that their optimal scenario for reconstitution would involve two things, getting the CVN–76 and having some submarine overhaul and repair work transferred to them from the Naval shipyards.

The RAND study said that Newport News could constitute with only one or the other of those two things and that you did not need most.

In the current cost study that Newport News has made its submission on, there is no submarine overhaul and repair work that I am aware of in their work package.

So the bottom line answer to the question you are asking, which is: does the Newport News workload include submarine overhaul and repair work transferred to them from the Naval shipyards, the answer is no, although they previously testified that that would be their optimal scenario along with CVN–76 for reconstituting.

Senator LIEBERMAN. Okay. I am going to pursue that in some questions more direct to Mr. Fricks.

Mr. Davis, you stated in your written testimony, and I quote, "We noted several questionable assumptions and computational errors in Newport News analysis that result in higher estimates of efficiency savings than the Navy would realize in each of the alternatives."

That is the end of the quote.

Later in your testimony you stated, "Several of Newport News's model assumptions concern us because we believe they eschewed the projected savings."

Could you just elaborate a few moments what troubled you in those assumptions and computational errors in the Newport News proposal?

Mr. DAVIS. Right. The computational errors, to be honest, were not very significant. They were minor in nature. In fact, we talked to Newport News. One of the errors that we found in their resubmission they had corrected and they made the adjustment.

We have also talked to them about some of the others that we have noted that were not major inputs. But the point was we were to provide comments to the House National Security Committee on our observations of the study.

So we thought it was noteworthy to mention that we did note these errors.

Concerning the assumptions, there are at least two major assumptions that they make to drive the numbers that they come up with. And we did not have the wherewithal based on the time we had and information we had to really delve into that as much as we would like.

One I think I mentioned earlier, and that deals with the labor costs. And they made the assumption that since they had spent less labor hours to complete SSN–688, they thought they would also spend less labor hours on the New Attack Submarine than Electric Boat, and that generated a large chunk of the savings.

And the other major issue had to do with the overhead in terms of how overhead was factored in. And those were some of the assumptions that gave us some concern.

We also had some concern about some of the way they treated some of the cost savings or cost avoidances, and we mention that also.

Senator COHEN. Senator Warner, do you have questions?

Senator WARNER. Thank you, Mr. Chairman.

I have rewritten a question in my own language. The Navy report maintains, Mr. O'Rourke, that the analysis of the Newport News underestimates their overhead rate by assuming unrealistically high levels of commercial foreign frigate and Navy repair work.

Did not your analysis examine a wide range of Navy foreign military sales and commercial workloads, and was it not true that Newport News was able to demonstrate significant savings under even the most pessimistic scenario?

Mr. O'ROURKE. The study did control for the amount of other work at Newport News, work other than for the U.S. Navy. Two values were chosen, one value where there was very minimal such work, and then a higher value, which Newport News considered to be a realistic workload that they would be able to win in the future, which the Navy felt was an unrealistic scenario.

But under either of those values, the Newport News calculations do show savings that are not that far apart from one another, which is to say once you go through the analysis, whether you consider the higher workload to be realistic or not, in fact Newport News's results are not all that sensitive to that particular variable.

Senator WARNER. Mr. Chairman, I would like to say once again, having gone back over Mr. Fricks's testimony, he made it very clear this morning that Newport News does not need submarine overhauls to compete for this new class of attack submarine.

He stated unequivocally that fact this morning. They need to be allowed—that is, the yard, Newport News—only to continue their design work on *Seawolf* and SSN–688.

So I would like to put to rest that there is any competition with other yards in the United States on that subject.

Senator COHEN. We would like to have that assurance and also to verify where the other information that has been actually circulating has been coming from.

Let me put a few questions to the panel, if I can, and try to conclude this by 4 o'clock.

Dr. Williams, you indicated, I believe, that you could cancel the *Seawolf*, the third *Seawolf*. You have obviously taken care of the nuclear component. You have taken care of the design team. And now we have to take care of the other vendors and hold them together.

And I think you indicated—what was the figure, $500 million——

Dr. WILLIAMS. $500 million.

Senator COHEN. Was roughly the amount. What other construction work would you recommend that Electric Boat undertake to hold them together for the next several years while you go back out and start the vanilla design proposal?

Dr. WILLIAMS. Our estimate of the cancellation of *Seawolf* assumed that you would not intend to keep Electric Boat going, that you would have a cold shutdown at Electric Boat.

Senator COHEN. I thought that you expected them——

Dr. WILLIAMS. We did not recommend anything, but our estimate assumes that you would not pay the price of maintaining operations at Electric Boat for any interim period bringing them back after shutting down *Seawolf*. So——

Senator COHEN. In other words, your analysis——

Dr. WILLIAMS. So that $500 million is an estimate—for a cold shutdown at Electric Boat. It includes money for the increases that you would see in the existing contracts. And it includes starting production of the New Attack Submarine at Newport News.

Senator COHEN. So in other words, there was not analysis made by CBO that would allow for any kind of up-front competition for the new class submarine.

Dr. WILLIAMS. No, that is the cost estimate that we are in the middle of now. We would like to be able to estimate the costs and effects of competition, but we have not done that yet.

Senator COHEN. I see. So your analysis is simply on the shutdown of Electric Boat, period.

Dr. WILLIAMS. That is right.

Senator COHEN. And those that are the costs that would be—all right.

Mr. O'Rourke, would you clarify for us or me the difference in the analysis between constant dollars and then-year dollars?

Mr. O'ROURKE. Newport News's submission calculated their savings in then-year dollars, which is to say they include an anticipated rate of inflation, which is compounded out into the future at a 4-percent-per-year rate, so that dollars that appear in the fiscal 2012 column are considerable inflated from what they would be, for example, compared to just a constant dollar value.

So when you take the compounded rates of inflation out of the year-by-year figures submitted by Newport News and then sum up the resulting constant dollar figures, you arrive at cumulative savings figures for this entire period, which are, to some degree, lower than what the Newport News estimate is.

And in my own written statement, I have done that calculation. I think the other agencies have done it, also. And what you wind up with is an estimate that started off, for example, for scenario 1–A at about $7.6 billion, if you convert it into fiscal 1996 dollars, it turns into an estimated cumulative savings of about $5.8 billion.

The Navy's estimate was in constant 1995 dollars, and you convert those into constant 1996 dollars with about a three-percent deflator, or in this case an inflater.

Senator COHEN. Do you consider both of the Newport News and the Navy's cost benefit analyses to be objective?

Mr. O'ROURKE. Objective?

Senator COHEN. Yes.

Mr. O'ROURKE. I think both sides, in doing their reports, tried to show the best or the strongest cases that they could put together.

And consequently, I think there are aspects of both studies that can be questioned, as I think has been indicated to some degree by the other witnesses earlier.

Senator COHEN. Okay. So both sides are basically advocating a particular position and making certain assumptions that would make the best case for their policy decisions. Is that what you are saying?

Mr. O'ROURKE. I believe so. That would be the way I would characterize it.

Senator COHEN. Does it not come down to the question—while my colleague is still here from——

Senator WARNER. I am going to——

Senator COHEN. No, no, no. I would not say this without you being here.

But I would not be one to minimize the notion that you could have a disaster at one site, and therefore if you can have it at one site, you can have it at multiple sites with equal ease.

If I were to think back, for example, on the incident in Oklahoma City, my understanding is that there were plans underway not only to hit one city but several cities.

And by virtue of the intervention very quickly on the part of the FBI and other authorities, those multiple plans were not able to be carried out.

So I would not, in any circumstance, minimize the fact that if you can carry out an attack on one site, you can do so with equal ease at other sites.

Second, I think that all of our yards remain vulnerable. I recall going to Electric Boat back in the early eighties, as I recall, when we were talking about the nuclear freeze movement.

And we had several nuns who sailed a canoe boat into Electric Boat and banged on the hulls. They did not do much damage. They ripped off a couple of antennas, as I recall, but it called—at least I was calling at that time for rather increased security at all of our yards, all of them being vulnerable not only to international terrorists but homegrown types of terrorists.

So that, in my own opinion, has not diminished in any significant degree. So whether one is talking about a bolt out of the blue attack on Electric Boat or Newport News, a suitcase bomb coming from international terrorists, or some chemical fertilizer, or chemicals being mixed with fertilizer, and being exploded in a Penske or Ryder or U-Haul It, I think that we ought not to minimize those prospects by saying that you can get them all—if you can get one, you can get them all. That is not necessarily true.

So I would not minimize the notion that there is not some risk factor involved that we should discount as being completely implausible.

My final point——

Senator WARNER. Would the Chairman kindly entertain the question: What about the B–2 bomber? It is a strategic instrument built basically in one central location. Do we have to duplicate locations for a number of our——

Senator COHEN. I understand that, also. But I think I could make the point, if you have—I suppose it would not have had quite the same disaster at Pearl Harbor if you had some of the boats at San Diego. But that is not—I will not carry it out at this point.

If you can concentrate all of your assets in one spot, you make the likelihood of their loss that much greater. Surely, you can minimize it under some circumstances by at least diversifying somewhat.

It is a debatable position. I just did not want to have the record go unchallenged that if you can have an accident or a sabotage at one site, you can have them at all. I think that that obviously is possible, but you also have a potential to stop it.

My final point that I would make, in a sort of bottom line look at this for the time being, is that if you follow the Navy's proposed course of action, Newport News is still in business.

There is some potential, however remote—and I would suggest it is probably remote—that you could reconstitute the submarine force within a reasonable period of time.

If we are looking at, I think he said, 6, 7, 8 years, you could probably get that quality of force back. That may be an exaggeration. I am not sure.

Mr. O'Rourke, we will have to call upon your expertise to give me some insight into that perhaps.

But at least Newport News would still be in existence, and the potential for a reconstituted submarine capability would be there however marginal that might be.

If you follow the CBO analysis or those who advocate even the competition up front and Electric Boat is out of business, there is no conceivable hope of reconstitution. I do not think there would be any disagreement at the table with that.

If they are out of business, you will never get a reconstituted submarine capability at the Electric Boat yard. When you shut down a nuclear facility, given the constraints in our society today, you do not reopen them. It is virtually impossible to meet, number one, environmental standards and overcome citizen opposition.

So I think that is also a factor that has to be taken into account. It may not be dispositive, but it is something that we have to take into account, that on the one hand—and I think this what the Navy has suggested, that Newport News continues with aircraft carriers with the outside remote possibility of coming back with submarines.

If you had to at some point in time shut down Electric Boat, there is no hope, period. You have the one yard.

Again, that may not be dispositive in this case, and we will have to look at the cost constraints and other factors involved. But those are surely issues that we have to take into account.

Senator WARNER. Mr. Chairman, on that point, we should clarify when you use the phrase "close down the yard," there is the physical structure of the yard and there is the work force.

And both in the case of terrorist attack and shutting it down, you have to look at those things, I think, separately.

You can reconstruct the yard in the case of a terrorist attack in some foreseeable period of time, but to reconstruct a work force, in my judgment, requires many more years than to refurbish a yard.

Therefore, closing down submarine production at Newport News, in my judgment, loses that work force, albeit partly retained on the carrier work. And that is the great loss in either location.

Senator COHEN. Right. Well, in Electric Boat, you lose both. You lose the work force, and you lose the yard. And again, we will have to analyze that.

Senator LIEBERMAN. Mr. Chairman, if I may, I mean, that is exactly the point. That is why there is a marvelous kind of irony to the Newport News position here, which is to be for competition.

But the effect of competition would be to leave Newport News as the ultimate sole source, because there is no chance of reconstituting Electric Boat once it closes or of creating another nuclear yard.

I mean, that is part of what we have to evaluate here for the reasons that you have stated.

If I might just briefly say that if in fact—on this question of overhaul work from the Navy yards, if in fact Mr. Fricks did say today, and I will ask him about this in our interrogatories, that the Newport News proposal is not dependent on work from the Navy yards, then it is, in my opinion, respectfully, a change of position and thus—everybody is free to change their position, but as Mr. O'Rourke said in the earlier notions of the optimal program, that was part of it.

And finally, I would say—and I am not sure whether we—when you were talking, Mr. O'Rourke, before about both sides, whether you meant Newport News and the Navy, because there are two sides here, which are Newport News and Electric Boat, but I am unprepared in any fundamental sense say that Newport News is a business.

Understandably, seeking more business deserves in its position as much deference as the Navy having made a judgment, which I take to be one based on national security.

This has been a long but very interesting hearing.

And I thank you, Mr. Chairman, for your gracious conduct of it.

Senator COHEN. Mr. Davis had two fingers—and Senator Warner knows, when we go to Veracunda that if you have a two-finger intervention, that means it is immediate; we must recognize you. [Laughter.]

So, Mr. Davis, if you held one finger up, I probably would not have recognized you.

Senator LIEBERMAN. It would depend on the finger.

Mr. DAVIS. I did not know the rules, but I am glad you informed me of that.

I just wanted to maybe clarify something, because, maybe based on a comment that I heard Senator Lieberman make, he misunderstood what I said, and I would like to clarify that.

When I was talking about the issues of Russian build rates, I would like to go back and say two things. One is that we have not found any disagreement whatsoever, no disagreement whatsoever, in the intelligence community in terms of the capabilities of the new Russian submarines, in terms of their quietness. That is unchallenged.

Senator LIEBERMAN. Right.

Mr. DAVIS. I was trying to make the point that there are other issues to include build rates in which there is not that same consensus.

In fact, the DIA is to the point where they have established ranges, because they do not know where it is at. And they gave a high range and a low range.

And I just wanted to clarify that, because I was not sure, based on some of the things I heard you say——

Senator LIEBERMAN. No. I appreciate that. So what you are saying is that there is agreement that the Russians will continue to build improved submarines, including the improved the class Akula. The question is: How many, and how rapidly?

Mr. DAVIS. Right. And for a whole bunch of reasons.

Senator LIEBERMAN. Fine. Thank you.

Senator COHEN. Mr. Davis, Dr. Williams, Mr. O'Rourke, thank you very much. I am sure we will be hearing more from all of you and you from us in the next couple of months.

The committee will now stand adjourned.

[Questions for the record with answers supplied follow:]

QUESTION SUBMITTED BY SENATOR JOHN WARNER

Senator WARNER. Mr. O'Rourke, did the Electric Boat Division fully cooperate in providing you with all requested cost data to support the analysis you undertook?

Mr. O'ROURKE. The Electric Boat Division (EB) had two main opportunities to cooperate in providing data to support the analysis that was undertaken on the relative costs of the two-yard and one-yard strategies for acquisition of nuclear-powered warships.

The first was the opportunity given to EB, Newport News Shipbuilding (NNS), and the Navy to submit their respective estimates of the relative costs of the two-yard and one-yard strategies using the eight scenarios and the cost-accounting framework established for the analysis. One possibility would have been for EB, NNS, and the Navy to each make a submission, have each party comment on the other two submissions, and then have the Congressional Budget Office (CBO), the Congressional Research Service (CRS), and the General Accounting Office (GAO) provide their own evaluations of all the submissions and commentaries.

This approach would have generated substantial data, commentary, and evaluation, but it appeared too cumbersome to be completed by the deadline established by the House National Security Committee, which called for the study to be completed in time to support the House committee's markup schedule. It also would have required special care to ensure that proprietary data from one company would not be transmitted to the other during the commentary stage.

During discussions on whether to use this procedure, EB offered to decline the opportunity to make a submission or comment on the NNS or Navy submissions. EB stated that this would help streamline the procedure and eliminate concerns over the potential transmission of proprietary data from one shipyard to the other. EB also expressed a doubt that its submission would in any event be substantially different from the Navy's submission. In view of the House committee's deadline for completing the analysis and the prospect for receiving submissions from both the Navy and NNS, the House committee accepted EB's offer to withdraw from the process.

The Navy also declined the opportunity to make a submission. The Navy stated that its interest in the process related primarily to the opportunity it provided to comment on NNS's submission. The Navy stated that it preferred not to make a submission because doing so would in effect put the Navy in the position of generating an alternative to the administration's acquisition strategy. The Navy provided some baseline cost data for the analysis, and in effect made a partial submission by publishing some cost estimates in a Navy report on its submarine acquisition plan that was dated May 1, 1995 and distributed to congressional offices in early May. The Navy also provided CRS with some supporting data for its published estimates, and briefed CBO, CRS, and GAO on aspects of the methodology used in generating them.

NNS was the only party that submitted a full estimate of the relative costs of the two-yard and one-yard strategies using the eight scenarios and the cost-accounting framework established for the analysis. In view of the House committee's deadline for completing the analysis and NNS's desire to comment on any commentary that the Navy might make about the NNS submission, the House committee agreed that the Navy would not comment on NNS's submission and that NNS's submission would be sent directly to CBO, CRS and GAO for separate evaluations.

In the course of evaluating NNS's submission, CRS identified an important issue concerning the relative intrinsic costs of submarine construction at EB and NNS that could not be evaluated without access to historical data on basic wage rates at EB and NNS and on worker hours and material costs for SSN–688 class submarines built at EB and NNS. CRS requested this data from the Navy; the Navy responded by saying that this data could not be released to CRS because it was proprietary and highly business-sensitive data from the two shipyards that the Navy did not have permission to release to others.

Subsequent to this, in early May, then-Assistant Secretary Nora Slatkin asked CRS whether CRS had received all the information it needed and expressed a willingness to provide CRS with any information it needed but had not yet received. CRS asked then-Assistant Secretary Slatkin's office to intercede on the issue of providing the proprietary historical data that CRS had requested. Then-Assistant Secretary Slatkin informed CRS that she would work to provide this data to CRS, but that this would require the Navy to ask EB and NNS for permission to release this data to CRS. The Navy's request to the two shipyards for permission to release this data to CRS provided EB with its second opportunity to provide data to support the analysis.

On May 15, the Navy told CRS that both shipyards had agreed to release data to CRS and had submitted data to the Navy for transmission to CRS. The Navy stated, however, that the shipyards had submitted data in differing formats, and that the Navy was working to put the data into a common format so that it could be used for making an "apples to apples" comparison. On June 5, the Senate Armed Services Committee, informed by CRS that CRS had not yet received the data, told CRS that it was planning to write the Navy to formally request the data under the authority of the committee.

QUESTIONS SUBMITTED BY SENATOR JOSEPH LIEBERMAN

Senator LIEBERMAN. Mr. Turner, please explain how Electric Boat is using the design/build concept to ensure affordability in the New Attack Submarine program. What would happen to the savings and advantages which are being made if the Navy were to suddenly reverse course and direct that a competition be held for construction of the lead ship of the New Attack Submarine program?

Mr. TURNER. The New Attack Submarine design/build concept capitalizes on the extensive multi-class submarine design and construction experience at Electric Boat and the lessons learned from previous programs, to establish a truly unique and totally integrated approach to submarine design and construction. This approach treats the previously separate design and construction elements as a single process—Design/Build. The process is being used to optimize the NSSN design for the modular construction techniques pioneered by Electric Boat, to allow for future technology insertion, and to reduce or eliminate traditional cost drivers in the early phases of the design process.

The Design/Build process uses advanced electronic design tools, such as electronic visualization techniques, and a single electronic design database to allow the simultaneous application of the skills and abilities of all participants in the submarine design and construction process, starting with the initial phases of design through to delivery of the lead ship. All elements of the product life cycle from conception through disposal, including quality, cost, schedule, and operator requirements, are considered. Cross-functional teams including the shipbuilder, the Navy, and key suppliers are already in operation.

Benefits from this Integrated Product and Process Development approach include reduced product development time, meaningful performance versus cost tradeoffs, minimal change and rework, and producible designs, all leading to an affordable, capable platform.

If the decision were made to introduce competition either for the design or for construction of the first NSSN, the benefits of a single contracting vehicle, as well as of the design/build process itself, would be significantly diminished. Some of the specific impacts include:

- Integration of all Electric Boat resources, including the proprietary manufacturing processes (modular construction techniques, welding processes, work sequencing documents, etc.) would not happen if the designers knew that the second source would be provided everything that distinguishes and differentiates the production processes. Thus, any production process resulting from competition might well represent less than the optimum approach.
- Newport News would presumably be awarded participating design yard/design review contracts to maintain familiarity with the developing NSSN design. At some point, interim design products would have to be developed which would constitute the construction proposal specifications and drawings required to support an fiscal year 1998 lead ship construction contract. Contractually, this puts the Government in the position of warranting design information to the builder.

The introduction of a competitive environment would inhibit Navy participation and decision-making on design/build teams as is currently envisioned. Similarly, Electric Boat and the principal suppliers working on the design/build teams would be inhibited from freely sharing all proprietary information with the Government and Newport News, since preserving a competitive advantage would be critical.

- Competition would impact the contractual benefits related to management of an integrated design/build process as currently envisioned. Rather than managing progress toward the delivery of the ultimate product—the submarine—the Navy would find itself enmeshed in the administration of separate design, material procurement and construction contracts.

From a financial and risk management standpoint, competition should be conducted in the NSSN program when it provides the most advantage to the Government. The Integrated Product and Process Development environment currently in place on the New Attack Submarine program necessitates lead ship construction at the lead design yard. Lessons learned on the *Seawolf* program show this to be the lowest cost approach, and it is consistent with other shipbuilding and aircraft building programs. Once the design is validated in production, then competition should occur when production rates support introduction of a second builder.

Senator LIEBERMAN. Mr. Turner, please describe how Electric Boat came to use modular construction to build submarines. Was this something which Electric Boat copied from another shipbuilder or did Electric Boat pioneer the effort.

Mr. TURNER. Electric Boat began implementing off-hull "pre-packaging", of multifunction assemblies (machines, piping and structures) in later ships of the SSN–637 class with demonstrated improvement in production labor costs and construction schedules. Electric Boat Division also participated in the STRAT–X study to define concepts for the next generation of strategic missile submarines. These efforts led to the conclusion that a major facility modernization would be necessary to cope with the ship size and throughput requirements of these programs and to optimize the benefits of sectional/modular construction.

In 1970 Electric Boat undertook a comprehensive planning study to examine the potential long-term business outlook and to define facilities and resource requirement alternatives. An investigation of world-wide shipbuilding "state-of-the-art" techniques was conducted which included visits to observe techniques being used. During this period (1969–71) the advanced fleet ballistic missile submarine project evolved from STRAT–X to ULMS (Undersea Long-Range Missile System) to *Trident*. Electric Boat was continuously involved as the ship design agent with contract responsibility for development of the ship and its producibility and supportability (ILS) features aimed at maximizing mission effectiveness while minimizing acquisition and life-cycle costs. This was the pioneering effort in the Navy's application of design/build concurrent engineering techniques to a major ship acquisition program.

As cost-effective advances in production, design and management methods have become available over the past two decades, Electric Boat's modular construction technology has been updated throughout the building of the *Trident* (*Ohio* class) submarines, is being employed to build the *Seawolf*, and will be enhanced even further by the latest computer design techniques for the NSSN. The NSSN design will he the beneficiary of Electric Boat experience on three generations of submarine modular construction techniques—the original *Trident* experience, the rework to the *Los Angeles* class design, and the *Seawolf* construction program. It is worth noting that Electric Boat is the only U.S. shipyard to ever actually build a submarine designed for modular construction, while Newport News experience is limited to the traditionally designed *Los Angeles* class.

Senator LIEBERMAN. Mr. Turner, as the Navy prepared for construction of the *Seawolf* class submarines, was Electric Boat the only shipbuilder using modular construction? Did the Navy ask Electric Boat to share its expertise in modular construction so that the lead design yard— Newport News Shipbuilding—could become better adept with this technique? Did Electric Boat do as the Navy requested and share its knowledge with Newport News?

Mr. TURNER. As the Navy prepared for construction of the *Seawolf* class submarines, Electric Boat was the only shipyard with extensive modular construction experience on nuclear submarines, having constructed both a single 688 class and all *Trident* class submarines on the Land Level Ship Construction Facility (LLSCF) since its completion in 1976. By contrast the Newport News Modular Outfitting Facility (MOF) was not completed until 1987, and only 688 class submarines, which were not designed for inodular construction, had been under construction thereon. It should be noted that Electric Boat has, over the life of the 688 class construction program, applied its modular construction expertise retroactively to the Newport News traditional design in order to increase the modular outfit work significantly. A rough estimate indicates that from a design considered only 10% as "modular" as *Trident*, the most recent 688's at electric Boat are 50 percent "modular".

The Navy instituted contractual vehicles in the *Seawolf* design process to ensure that Newport News would gain the benefit of Electric Boat modular construction knowledge and experience.

Through the Participating Design Yard contract, the Navy went on to establish the *Seawolf* Producibility Steering Group: a working group with Newport News, Electric Boat and the Navy members.

This group served as a platform for Electric Boat to impart the benefits of its experience to Newport News, along with the extensive comments provided by Electric Boat on the Newport News front-end drawings. When appropriate, Newport News personnel toured the Groton and Quonset Point production facilities, and in addition to the liaison team established at Groton there were Newport News personnel resident at Quonset Point during construction of front-end modules.

Senator LIEBERMAN. Mr. Turner, its has been stated that "by the year 2000 every attack submarine in the U.S. Navy fleet will have been designed by Newport News." Is it not true that Electric Boat has also designed a few attack submarines as well as ballistic missile submarines?

Mr. TURNER. Electric Boat has certainly designed "a few" attack submarines as well as ballistic missile submarines. In fact, ever since the Holland Torpedo Boat Company, which later became Electric Boat, designed the Navy's first submarine, *Holland*, 100 years ago, Electric Boat has always been considered this Nation's preeminent submarine designer. In the modern era of nuclear power, Electric Boat designed and built the first nuclear submarine, *Nautilus*. Electric Boat designed and built the first ballistic missile submarine, *George Washington*, as well. As testament to our design expertise, of the 19 nuclear submarine classes developed in this country, Electric Boat designed 15, and is participating in the design of one other, *Seawolf*. Of these 19 nuclear propulsion plants developed, Electric Boat designed 18. And of all ballistic missile submarines ever produced by this country, Electric Boat designed every single one.

The cumulative effect of this design experience has developed the depth and breadth of Electric Boat's current design expertise. Only Electric Boat has designed a liquid metal-cooled reactor plant. Only Electric Boat has designed a natural circulation reactor plant. Only Electric Boat has designed a nuclear powered electric drive submarine. Electric Boat's unique and considerable experience with class designs, prototype designs, and other one-of-a-kind technology insertion projects is continually brought to bear in development of the latest submarine classes, for submarine design is an evolutionary process. At Electric Boat, submarine design not only exploits new technical concepts and application of emerging technologies, but, just as importantly, also evolves from the accumulation of prior successes, lessons learned, and reconsideration of past ideas that were once set aside as too far ahead of their time. At Electric Boat, this corporate knowledge is systematically passed to the next generation of designers, in the form of documented "best practices," thousands of proprietary technical reports, and personal mentoring. In the design of submarines, only Electric Boat can capitalize on such vast experience, because only Electric Boat has had sole responsibility for 15—not 1—nuclear submarine designs.

By the year 2000, there will be three classes of combatant submarines in the U.S. Navy's operating fleet: SSN–688, designed by Newport News; *Trident* designed by Electric Boat; and *Seawolf*, designed by both shipbuilders on an equally participating basis. While this is a more objective view of recent submarine design history, it does not accurately reflect the relative capabilities of the two design yards. A truly objective assessment can only be provided by the customer—the U.S. Navy. In this regard, Electric Boat would point out that in a March 1992 report on preserving the Nuclear Shipbuilding Industrial Base, well before this current debate was raised, the U.S. Navy acknowledged that Electric Boat, "by virtue of vast experience and innovation, . . . is, without question, the world's premier resource for submarine design and construction technology."

Senator LIEBERMAN. Mr. Turner, please explain what is meant to be the "lead design yard" for a class of submarines. Explain how the design for *Seawolf* was performed. Are there any particular construction problems, or other problems, which come about when design is split in such a manner? Are there implications for costs?

Mr. TURNER. Historically, the Navy has selected a "design agent" responsible for design of the entire submarine, with the exception of the nuclear propulsion plant. In the context of submarine shipbuilding programs, the term "lead design yard", or LDY, is actually an anomaly, used to describe the unique design experiment that has only been tried on the *Seawolf* program. On *Seawolf*, Newport News was designated the "lead design yard," responsible for coordinating the overall design and detail design of the forward end. Electric Boat was designated the "participating design yard," or PDY, responsible for the detail design of the aft end. In addition, as it had been for 17 of the preceding 18 nuclear submarine classes, Electric Boat was assigned as the "propulsion plant design yard", or PPDY, responsible for the entire nuclear propulsion plant. The Navy adopted this split design approach, insisting on equal design participation by both shipyards and requiring that design data be suitable for use by either shipyard, in order to instill competition for building 29 *Seawolf* submarines, including the lead ship. As documented by the GAO, the split design approach caused significant cost increases and schedule delays for detail design and lead ship construction.

In October, 1994, the GAO completed a comprehensive report (GAO/NSIAD–95–4) documenting the lessons learned from prior submarine programs, particularly the *Seawolf* program, for incorporation into the NSSN program. The GAO specifically stated that "the split design approach..., which required additional time and resources as well as a high degree of coordination between the two shipbuilders, caused design and construction cost increases and additional time to approve design data and to resolve design drawing problems. Electric Boat, to construct the SSN–21, still had to convert Newport News Shipyard's generic design data into Electric Boat specific work packages (instructions and materials). In addition, the Navy's *Seawolf* program office occasionally had to mediate the resolution of design drawing problems between the two shipyards. Confusion between the two shipyards over design drawing delivery schedules was one factor that led to late delivery of design drawings to Electric Boat . . ."

The communication and coordination problems associated with a split design on *Seawolf* also impacted the inherent challenge of concurrent development and lead ship construction. This was a particular problem with the *Seawolf* forward end because, although Electric Boat is now in its third generation improvement of the modular design and construction process it pioneered 25 years ago, Newport News has never built a single submarine designed for modular construction. As the GAO specifically noted, "It was later discovered that because *Seawolf* submarines required a significantly greater level of modular construction and outfitting, new and more detailed sectional construction drawings were needed to initiate modular construction tasks. As a result, in June 1990, 8 months after SSN–21 construction started and about 37 months after detail design started, the Navy rebaselined and increased Newport News' original $303 million detail design contract by $168 million. The rebaselining was for Newport News to prepare and to provide Electric Boat with more detail design data and incorporate final submarine specifications into the detail design."

In summary, the GAO has assessed and documented the problems associated with a split design approach. The GAO has repudiated this concept, and specifically endorsed the acquisition strategy of contracting with a single shipyard to both design and construct the lead NSSN.

Senator LIEBERMAN. Mr. Turner, assertions have been made that Electric Boat was not cooperative with the efforts of Congressman Hunter of the House National Security Committee to provide data to the Congressional Research Service for analysis of the Newport News proposals on New Attack Submarine. Has Electric Boat refused to provide any requested data to Congressman Hunter or any of the other analysts? Did Electric Boat work with the Navy to ensure that the Navy accurately stated the information it was providing on its dealings with Electric Boat as part of the design/build team for New Attack Submarine? Was Electric Boat provided an opportunity to comment on the data submitted by Newport News or on its proposal?

Mr. TURNER. Yes, Electric Boat has provided the committee with all requested data. Yes, Electric Boat worked with the Navy to ensure that the Navy data provided was accurate. No, Electric Boat was not given an opportunity to review or comment on data submitted by Newport News on its proposal to the HNSC.

Senator LIEBERMAN. Mr. Fricks, the Bottom-Up Review—which stated the administration's intent to maintain two nuclear capable shipyards: EB for submarines and NNS for CVNs—was completed in October 1993. It is now 16 months later and you have begun your campaign on competition. Why did 16 months pass before Newport News broached the idea of competing the New Attack Submarine?

Mr. FRICKS. It was not until fiscal year 1996 that the administration proposed significant funding for future submarines in its budget. At that point it became clear to Newport News that it needed to speak up to assure it would be involved in any new program.

Senator LIEBERMAN. Mr. Fricks, on page two of your prepared testimony, you state: "We want to compete for the opportunity to build the New Attack Submarine. We have been told "Don't even apply." The Navy wants to sole-source this program to the Electric Boat Division of General Dynamics." Who has told you "Don't even apply"? What Navy or DOD document or decision are you basing your claim that the "program" is to be sole-sourced, as opposed to the ship?

Mr. FRICKS. The Secretary of the Navy has testified this year that there would not be competition in this program before the year 2003 or later. By that time Newport News Shipbuilding would be out of the submarine business for over 10 years, would have lost the skills, and would not be able to compete. Electric Boat would have achieved a monopoly.

Senator LIEBERMAN. Mr. Fricks, the Acquisition Decision Memorandum which addressed the conclusions of Milestone I stated that the NSSN would be designed and built at Electric Boat. Is there some other document indicating a decision has been made to award the entire class to EB?

Mr. FRICKS. See answer to above question.

Senator LIEBERMAN. Mr. Fricks, the Navy has said as recently as the May 1 Report to Congress that Newport News may be awarded a "familiarization contract" to enable it to compete on a level footing for construction. What's wrong with this proposal? Haven't you said in the past that some 85 to 95 percent of the expertise necessary for submarine construction is common with CVN construction? Is this not the basis for your contention that labor costs will be lower at a yard which produces both CVNs and SSNs since workers possess the skills needed to be moved from one work project to another?

Mr. FRICKS. This proposal could be helpful although far from optimal, particularly if Newport News Shipbuilding is denied access to significant meetings reviewing key data. We testified in the past that 80 percent (not 85 to 95 percent) of the skills used in submarines could be maintained by CVN construction work for several years. Our point here has been that after a few years the loss of the other 20 percent would be fatal to our future involvement in the submarine program. In any event, that is not the basis for the Newport News contention that labor costs will be lower at a yard which produces CVNs and SSNs. Rather, our overall costs will be lower due to the spreading of overhead over a greater number of ships and more efficient use of the labor force.

Senator LIEBERMAN. Mr. Fricks, did Newport News compete for the design contract for the *Los Angeles* class submarine? How did you receive this contract? Was it sole sourced to you? How many ships were going to be in that class when the program was first discussed?

Mr. FRICKS. The contract was eventually sole-sourced to Newport News although the propulsion plant was originally let to Electric Boat. I believe when the program was first discussed there was not going to be a new "class"; the ship was to be one-of-a-kind.

Senator LIEBERMAN. Mr. Fricks, in preparation for the *Seawolf* program, did the Navy direct Electric Boat to assist Newport News in the latest modular construction techniques—techniques which EB had pioneered? Did they work with NNS?

Mr. FRICKS. Both Newport News and Electric Boat were already familiar with the latest modular construction techniques. At the direction of the Navy both yards worked with each other to assure that the new *Seawolf* design could be implemented in accordance with those techniques.

Senator LIEBERMAN. Mr. Fricks, you have said that NNS maintains the capability to build four submarines a year. You have also said that this is "far in excess of any projected building rate." Does this mean that NNS is maintaining significant excess capacity which ultimately someone has to pay for? How will the overhead costs of this capacity be absorbed by your customers?

Mr. FRICKS. We concur with the first two statements. The answer to the first question is no, we will not keep excess submarine capacity if we are not allowed to compete. The answer to the second question is that we have diversified our product lines, permitting us to spread overhead over a larger number of ships thereby benefiting all customers.

Senator LIEBERMAN. Mr. Fricks, in your prepared testimony (on page 6) You state: "trying to maintain 'two-nuclear capable-shipyards' is both counterproductive and very expensive." There have been a number of studies conducted on this subject, none of which seem to cone to the conclusion which you have stated on behalf of Newport News Shipping (sic). What studies and data are you basing your views on?

Mr. FRICKS. I based the statement in my prepared testimony on the internal study done by Newport News Shipbuilding and presented to the House National Security Committee. Contrary to the statement made, the Congressional Research Service, Congressional Budget Office, and the GAO, based upon their testimony to the Congress, all appear to have reached a similar conclusion.

Senator LIEBERMAN. Mr. Fricks, I understand what happened at the March 16 hearing before Chairman Hunter's National Security Procurement Subcommittee, the Chairman requested Newport News to submit data on its proposal to save billions to the HNSC by April 15. The HNSC was, in turn, to have the Navy and Electric Boar (sic) review this data, then CRS would take the data and comments for evaluation. As I understand it the rules subsequently changed and the submission dates also got further delayed. Your data was submitted, I believe, on May 2 to Mr. O'Rourke of the GAO but not for Navy and EB comment, is that correct?

Mr. FRICKS. Newport News Shipbuilding submitted the information to Chairman Hunter's subcommittee on time, as requested. Subsequently, Mr. O'Rourke asked us for additional data. We submitted that data to Mr. O'Rourke as well. It is our understanding that Electric Boat refused to comply with Mr. Rourke's requests and refused to provide the requested information to the committee.

Senator LIEBERMAN. Mr. Fricks, Mr. Turner has stated in the House Appropriations Subcommittee hearing that he can match his 1989 rates in 1998 if the 1989 rates are adjusted for inflation. In 1989, EB had a backlog of 16 ships. In 1998 there will be a backlog of 2. This seems to indicate that volume is not necessary for affordability. Please comment.

Mr. FRICKS. Mr. Turner has provided no data to support this assertion. Furthermore, the assertion is illogical and we believe it to be incorrect. In any case, we feel strongly that Newport News Shipbuilding can save the Government between $5 to $10 billion.

Senator LIEBERMAN. Mr. Fricks, you have spoken of NNS diversification. One of these programs is the "Double Eagle Tanker." Do you expect to realize a profit on your manufacturing of these tankers? If not, how does this assist in your efforts to spread overhead and assure adequate work at the shipyard?

Mr. FRICKS. Our profitability on commercial work is proprietary, but yes, we expect the tanker program to be profitable. However, profitability has nothing to do with the spreading of overhead on various kinds of work. Indeed the Navy will benefit regardless of Newport News Shipbuilding's profitability levels on commercial work.

Senator LIEBERMAN. Mr. Fricks, what sort of learning curve have you realized on nuclear aircraft carrier construction contracts? How does this compare with the learning which has occurred at Electric Boat on the *Trident* and *Seawolf*?

Mr. FRICKS. We have reduced our manhours by over 18 on the last four carriers. We do not know what learning curve Electric Boat has experienced on the *Trident*. The *Seawolf* ships have experienced enormous cost overruns and do not yet even have a basis to begin measuring the learning curve.

Senator LIEBERMAN. Mr. Fricks, the Navy competed the first and second *Seawolf*-class submarines and Electric Boat won those competitions. Newport News took the Navy to court over the award of SSN–22. What was the basis for this court action? What was the result? How much did this delay add to the cost of the SSN–22?

Mr. FRICKS. While Electric Boat won those two competitions based on extremely low bids, Electric Boat is now hundreds of millions of dollars over what Newport News Shipbuilding bid for those contracts. The basis for the court action was that the Navy changed the award criteria after issuance of the solicitation and violated procurement statutes, regulations, and directives respecting application of evaluation criteria. The U.S. District Court agreed with Newport News Shipbuilding; however, the U.S. Court of Appeals felt that, nevertheless, the its should not intervene in the Navy's executive decision making process. We have no knowledge of resultant delay or costs to the SSN–22.

Senator LIEBERMAN. Mr. Fricks, what are you using as your initial starting point for analysis on the price of a New Attack Submarine. I believe the Navy is saying the expected price beginning with the fifth ship will be about $1.5 billion each. If the $2 billion of savings on the first five, that leaves $8 billion to be saved over 25 ships or about $.32 billion per ship ($320 million.) Thus, are you saying that Newport News will be producing each New Attack Submarine for less than $1.2 billion each?

Mr. FRICKS. The New Attack Submarine is not yet designed so it is difficult for Newport News Shipbuilding to ascertain the cost of the ship. However, we have indicated separately and specifically that our savings will derive from building both submarines and carriers at Newport News shipbuilding as well as our other work. Therefore, the attempted logic underlying the calculation in the question is erroneous.

Senator LIEBERMAN. Mr. Fricks, what sort of profits do you expect to earn on these submarines? If it is the same 20 percent you are earning on the CVN–76, does that mean the cost of each New Attack Submarine is actually somewhere around $800 million?

Mr. FRICKS. First, the 20 percent figure is incorrect. The gross profit is in the 15 percent range based on estimated final cost, and that is before taxes, interest and shareline results have been determined. Second, the derivation of the $800 million figure is not clear. Also see answer to question above.

Senator LIEBERMAN. Mr. Fricks, the Navy's analysis of your proposals for New Attack Submarine production indicates that this proposal is actually a spreading of overhead costs from submarine work onto other programs you will have at Newport News at that time.

Doesn't this mean then that the costs of aircraft carriers and aircraft carrier overhauls will have to increase for you to absorb those increased overhead expenses?

Mr. FRICKS. See answer to question above. Due to the spreading of overhead cost over a larger base the cost of each ship is reduced. More importantly, the Government does not have to pay for overhead twice due to the maintaining of two facilities. The cost of carriers and overhauls will actually be reduced because of the larger base.

Senator LIEBERMAN. Mr. Fricks, please describe your experience to date with the design/build concept. Are you now manufacturing any ships using design/build? One of the advantages of design/build is that it eliminates the need for construction of a mockup. Did you build a mockup of the *Seawolf*? Why was this necessary if you were using design/build?

Mr. FRICKS. We have utilized design/build techniques at Newport News shipbuilding for years. A good example where the concept was used totally was in the *Seawolf* program. We are applying the concept to our Double Eagle product Tanker program, and we will use it on future ships as well. The Navy directed both NNS and EB to construct a mock-up of our respective parts of the *Seawolf* as was traditionally required for submarines up to that time. Because of the success of our three-dimensional computer modeling system, VIVID©, we were able to show the Navy that our mock-up was not required to complete the design. The Navy's confidence in VIVID© grew to the point where they agreed the mock-up need not be completed and millions of dollars were saved. The design/build concept itself does not eliminate the need for construction of a mock-up.

Senator LIEBERMAN. Mr. Fricks, would you explain how it is that you expect at Newport News the fact that you are diversifying will improve the efficiency of your workforce? The Navy had indicated that their real experience with other shipyards when they increased the different types of ships they were producing was that efficiency actually decreased. What is different about Newport News that will give it such a different result?

Mr. FRICKS. Newport News Shipbuilding is different from other yards in that it is the largest and most efficient. In addition, it is far and away the most diversified builder in the United States. Our success is due to our extensive cost cutting program, and our ability to enter the most competitive area of shipbuilding in the world—the commercial market—where our participation will continue to pay large dividends in making us yet more efficient. We have proven that making multiple products reduces the costs for all ships in all product lines.

Senator LIEBERMAN. Mr. Fricks, you have stated that Newport News can build the New Attack Submarine at a considerable savings to the American taxpayer as long as it also has additional work which, at various times in your explanation of the program, has included: more aircraft carriers, carrier overhauls, the LPD–17, 688 overhauls, your international frigate work, and the commercial tanker work which you have begun. In your response to questioning at the May 16 hearing you stated that submarine overhauls are not part of your assumptions for these savings to be achieved. How do you explain that your initial plan required these overhauls, but now you do not? Are there other elements of the plan which have changed since your first presentation of it?

Mr. FRICKS. We have stated that the considerable savings which we can provide to the American taxpayers are derived based on a work volume that can be reasonably anticipated. We have also testified that 80 percent of the reductions are derived simply by combining submarine and carrier work. We already have under contract and letters of intent orders which could reach over 15 product tankers. My May 16 testimony respecting submarine overhauls simply clarified that by overhauls we only meant SRAs (Selected Restricted Availabilities) and emergent submarine repair work as requested by the Fleet. Our plan has not changed since our first presentation of it.

Senator LIEBERMAN. Mr. Fricks, how can you base a plan such as this one on so many uncertain future outcomes? How much of this assumed work can not materialize before the predicted savings also fail to materialize?

Mr. FRICKS. See answer to previous question above. Our savings on the first five New Attack Submarines is based on work under contract or presently planned by the Navy, even at its low production projections. In the material presented to the House National Security Committee, even the work in the out years to 2015 is considered highly conservative. It is highly unlikely that any of the predicted savings will fail to materialize. In all probability the savings will be higher.

Senator LIEBERMAN. Mr. Fricks, how can you base a business plan on such uncertainties as the LPD–17? It is my understanding that there will be a number of shipyards competing for the LPD–17. How can you be certain that Newport News will win the competition from Bath or Ingalls or other competitors? Or are you suggesting that the Navy will have to award the LPD to Newport News without competition just as it does now for the aircraft carriers?

Mr. FRICKS. See answer to question above. We are not suggesting we be awarded any ships without competition.

Senator LIEBERMAN. Mr. Fricks, is it true that you can maintain CVN construction skills with CVN overhaul work? Since CVN overhauls will be continuous starting with CVN–68—which you have already been awarded—there should be no requirement to begin CVN–77 in fiscal year 1998. Is that your assessment as well?

Mr. FRICKS. No. CVN overhaul work will not maintain the skills required for construction of aircraft carriers. Furthermore, we are not aware of any plan to begin CVN–77 in fiscal year 1998.

Senator LIEBERMAN. Mr. Fricks, I noted in the prepared testimony of the CBO analyst, Dr. Williams, that she said. "The question is whether a shipyard would bid extremely low to win the contract and then raise the price after the losing shipyard left the submarine production business." This strikes me as a very valid concern, particularly if a company can absorb an unreasonably low price with other Government work which it has at the yard. What assurances are there that you would not do exactly as Dr. Williams suggests is possible and leave the Government no alternative since you will have succeeded in driving Electric Boat out of business?

Mr. FRICKS. First, Newport News shipbuilding is in business to make money. We have an enormous cost advantage over Electric Boat. Hence, there is no need for us to use profits and other work to capture the submarine work. In addition, we have reinvested at least $1 billion during the past 10 years to ensure we have the most efficient and productive shipyard in the world.

[Whereupon, at 4:05 p.m., the hearing was adjourned.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 1996 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, MAY 18, 1995

U.S. SENATE,
SUBCOMMITTEE ON SEAPOWER,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

MARINE CORPS MODERNIZATION PROGRAMS

The subcommittee met, pursuant to notice, at 1:05 p.m. in room SR–232A, Russell Senate Office Building, Senator William S. Cohen (chairman of the subcommittee) presiding.

Committee members present: Senators Cohen, Thurmond, Warner, Smith, Nunn, Kennedy, and Robb.

Committee staff members present: Richard L. Reynard, staff director.

Professional staff members present: Romie L. Brownlee, John H. Miller, and Steven C. Saulnier.

Minority staff members present: Arnold L. Punaro, minority staff director, and Creighton Greene, professional staff member.

Staff assistant present: Pamela L. Farrell.

Committee members' assistants present: Thomas L. Lankford, assistant to Senator Smith; Steven A. Wolfe, assistant to Senator Kennedy; William Owens, assistant to Senator Robb; and John F. Lilley, assistant to Senator Lieberman.

OPENING STATEMENT OF SENATOR WILLIAM S. COHEN, CHAIRMAN

Senator COHEN. The subcommittee will come to order.

We meet this afternoon to receive a report from the Commandant of the U.S. Marine Corps, Gen. Carl Mundy, on the status of the Marine Corps. The subcommittee, with responsibility and jurisdiction over the Marine Corps, has traditionally held this hearing to enable the Commandant to report on the status, requirements, and future plans of the Corps.

General Mundy has appeared before this subcommittee many times during his tenure as Commandant, and we understand this is going to be your last appearance before your retirement this summer. We have been through this before but we will repeat it again—we owe you a great deal of gratitude for the manner in which you have conducted yourself, the way in which you have testified before this subcommittee and the full committee, being very straightforward and always, I think, candid. And we cannot ask for anything better or more than to have an officer of your stature do that.

So, on behalf of the entire committee, I want to thank you for the selfless dedication you have given to our Nation.

In previous hearings, General Mundy has had the opportunity to report on the personnel and readiness issues affecting the Marine Corps. Our subcommittee is primarily interested this afternoon in reviewing and evaluating the more significant Marine Corps Modernization Programs. And in recent observances of the 50th anniversary of significant events in World War II and to add a different and, hopefully, interesting twist to this hearing, I have asked General Mundy if he would provide the members of the subcommittee an opportunity to view the Marine Corps Modernization Programs within the context of an illustrative scenario.

General Mundy has agreed to begin with a presentation of an historical example of amphibious assault conducted by the Marine Corps during World War II; and then, following that presentation, General Mundy is going to present the same battle as it might be conducted using current weapon systems and those under development, demonstrating the relative value of the new weapons, equipment, and doctrinal concepts of a modernized Marine Corps.

General Mundy, I hope that this has not greatly increased the burdens you have to carry in these final months, but I am looking forward to your presentation. And Senator Kennedy, who has always been a strong supporter of the Marine Corps, Senator Robb also being an integral part of that Corps, I would like to yield to you, Senator Kennedy, to make a statement.

Senator KENNEDY. Thank you, Mr. Chairman, for calling the hearing. It is, as you mentioned, an especially significant occasion because of General Mundy's last appearance before the subcommittee as Commandant of the Marine Corps.

The issues he will address today are of vital importance to the Nation's future security. We are all familiar in general terms with the amphibious operations, the central function of the Marine Corps. The Navy's new off-shore warfare strategy presented in "Forward from the Sea" describes the seapower plan in which the Marine Corps plays a major role. And the Marine Corps' Modernization Program will improve its capability to carry out the amphibious operations to move from ship to shore quickly and to land with increasing mobility and fire power.

I am looking forward to hearing more today about the Modernization Program and how it will change the way the Marines conduct amphibious operations. The modernization is also taking place under strict budget conditions, and our subcommittee has a very important role in considering the status of these programs in determining how to fund the necessary capabilities over the next decade.

Finally, Mr. Chairman, as you pointed out, General Mundy will be retiring after 38 years in the Corps. He has been Commandant for the past 4 years, led the Corps through a time of major upheaval and transition in the post-Cold War era, and he has done an outstanding job. It has been an honor to work with him.

President Kennedy was a Navy man, and I remember very well what he said at the Naval Academy one year in welcoming the new class of midshipmen. “I can imagine a no more rewarding career. And any man who may be asked in this century what he did to make his life worthwhile I think can respond with a good deal of pride and satisfaction, ‘I served in the United States Navy.’”

I know General Mundy feels the same way about having served in the Marine Corps, and I know he is proud of his two sons who also serve as officers in the Marines.

General, we join in commending you for your service to the Marine Corps, but also your very important service to our country and congratulate you for all the assistance that you have provided for this institution.

Senator COHEN. Thank you very much, Senator Kennedy. Senator Robb.

Senator ROBB. Thank you, Mr. Chairman. I appreciate the opportunity just to say a word before the hearing begins. Regrettably, I am not going to be able to remain for this hearing, having sat through, it seems to me, 5 or 6 hours yesterday or the day before, of——

Senator COHEN. *Seawolf.*

Senator ROBB. *Seawolf.* At least a meeting of this subcommittee. I hope you will not take any adverse inference in terms of my interest in the subcommittee, and when you are talking about Marine Corps matters there is no subject nearer and dearer to my heart. But when I learned that our commandant was going to appear, I wanted to come over at least to show the flag.

I take great pride in my own association with the Marine Corps, and much of the pride that many marines feel comes from the quality of service of officers like Carl Mundy, who is going to be retiring shortly. I join you and other members of this subcommittee, members of the Congress, and certainly marines and former marines all across the country in saying thank you for an extraordinary period of service and leadership to our Corps.

I know the challenges that confront us in the near term and ever since, I guess going back to the Truman administration, Mr. Chairman, when the Marines were a little bit concerned that we might be found somehow wanting in the process. We have always managed to do almost everything that was required of us for less; and, hence, we have come in—and I use the “we” because I still feel a very strong attachment to the Marine Corps and a sense of pride—trying to use the sharpest possible pencil in making requests and, in terms of modernization, I suspect, without in any way denigrating any other service or any other budgets that are submitted. And ours are normally about as tight as any that come about.

But the role continues, and the national stature of our Corps is enhanced because of the service of one Carl Mundy, and I just want to pay public tribute to that.

I hope that I will have an opportunity to review the comparisons between the battles—I think that is an extraordinarily effective way to make the comparisons between World War II and the next war that we might fight with the Marine Corps, and I hope that will be available for review.

But I apologize. I literally have an appointment with the Commander in Chief at this particular moment, but I thank you.

Senator COHEN. Senator Robb, thank you very much. And I am going to yield to you in terms of your experience during the Truman administration. [Laughter.]

Whatever empirical evidence you can bring to bear on the hearing today, I will call upon you for that. It was a bit before my time.

Senator ROBB. Thank you, Mr. Chairman.

Senator COHEN. General Mundy.

STATEMENT OF GEN. CARL E. MUNDY, JR., COMMANDANT, U.S. MARINE CORPS

General MUNDY. Thank you very much, Mr. Chairman, and each of you. And, Senator Robb, as you leave, let me just say that your not being just in support of the Corps but being a part of the Corps has not been ever lost on we who are marines, and we appreciate your great service here and your good words to me, but also your good words about the Corps. So thank you, and please give my best and my respects to the Commander in Chief when you go to see him.

Senator, I appreciate also both of your remarks here. You have suggested that perhaps it increases the burden for me to come up here. Let me assure you, as I know that my predecessors have and as I know each of you understand, that one of the first lessons that any commandant comes to realize is that without the Congress of the United States, there never would have been and never will be a United States Marine Corps. So there is never a burden for any one of us to come here and have the opportunity to represent the Corps before you.

You have placed an interesting twist on my addressal to you this afternoon. I will try and be brief in it. But I think it does serve usefully because I have reached that point, I suppose, to where I am reflecting not just on my service or certainly not on the 4 years—commandants are only a part of the continuum of the existence of the organization, the institution. But it is useful to reflect and, particularly, as you said in your letter to me, to come over here at this particular juncture.

If we went back 50 years, as you have mentioned, today, we would find that of the six Marine divisions and the five Marine aircraft wings that were in the Pacific, three of them were licking their wounds after having been successful and victorious but badly mauled at the Island of Iwo Jima, which occurred between the period of the 19th of February and about the 20th or so of March by the time the island was declared secure.

In that particular battle, we took some dramatic casualties, and I will have more to say about that and successive ones in just a minute. But let me drop all the way back to the origins here in World War II because I think that too is useful.

We commenced the war on an island called Guadalcanal in 1942, the first offensive of U.S. forces in the Pacific, and that was the first Marine division and elements of what we later came to know as the First Marine Aircraft Wing. It is on that island that some of the fundamental concepts of where we are today and where our view of the future today began to take form.

We learned there not too much about amphibious operations because, very candidly, it was not much of an opposed landing; we simply took men and materiel and some airplanes and whatnot and placed them onto an island. And, after we got there, the Japanese then counter-attacked and the battle began. But it was not an opposed landing, so it was mainly just a ferrying operation of men and material ashore.

We did begin to operate aircraft in a fairly unprecedented way at that point, operating as a part of the ground element from Henderson Field, which was the objective of the campaign, to seize this airfield. And so we put Marine air, we put some Navy air, and indeed we had Army Air Corps forces there in what was known as the Cactus Air Force.

But the key, starting there as a point of origin, was that we learned there on Guadalcanal two things: Number one, the quality of the individual, that we won over the Japanese forces there not because of superiority either in numbers, in fire power, weapons, technology, whatever it might be. We won because of the quality of the American service man that was placed ashore, that endured tremendous hardship and that fought furiously and courageously and won there.

The second lesson from that particular battle was the integration of tactical air power with maneuvering ground formations. We had never done that before, none of the armed forces. So we began to formulate there the ability to use airplanes as flying artillery rather than airplanes just as interceptors or air defense aircraft, or to bomb ships or to bomb somebody else's airfield. It became an inherent part of what is today a very doctrinal foundation of the Marine Corps in Marine air-ground task forces.

We moved from Guadalcanal on up to other successive engagements; but, looking at the principal ones, the next one that really would capture the minds of America was Tarawa, and this occurred in 1943. This was a small atoll in the Pacific. Again, the purpose was to seize an air base. Everything that we used marines for in the Pacific during World War II, up to the final battle at least, was to seize air bases to enable us to extend the reach of our air power, usually with Air Force air flowing in and then operating from those bases.

At Tarawa, we learned a couple of bitter lessons. There, we began to experience what we have come to know as the amphibious assault, because there we were going against a fortified enemy that intended for us not to be able to get ashore.

At Tarawa, the Marines made strong representation for an amphibian vehicle that we had developed, which would give us the ability not only to crawl over the very shallow reef that extended almost a mile and a half out to sea, that would enable us to get over that in the event the tides were not right but, more importantly, that would give us the ability to maneuver once we got ashore. Instead of just dumping men and materiel on a beach and then starting the war from there, this concept would have us able to not only reach the beach but to continue to move inland and to maneuver our forces inland. That was the first of what we know today as the assault amphibian vehicle.

Some things never change. In that particular battle, we wrestled, in terms of requirements, for more amphibian vehicles to be able to get the marines ashore. We did not get them, could not get them; and we had to use the state-of-the-art which was the wooden landing craft that served us well in many other places in World War II but was not the craft for that particular operation. And the result was that, at about a mile to three-quarters of a mile out, marines jumped over the sides of boats and then waded ashore and were cut down by machine gun fire as they came in. So it was an enormously costly battle. In 1½ days, we took over 1,000 marines killed as a result of that particular style of warfare. But it was the state-of-the-art. That is the way you got there; that is the way you seized airfields in the Pacific.

In Iwo Jima—this moves us now into February 1945—we had perfected. Now we had the amphibian assault vehicles, now we knew about naval gunfire support, now we knew about strategic air support. We flew for 42 days, from the islands of Guam and Saipan that we had more recently taken against Iwo Jima; 42 consecutive days. The most thorough and most continuous strategic air strikes that we could put against that island, continuous for 42 days. We brought battleships off of shore and we pounded the island with 16-inch guns and with all of the technology of that particular era. And then we landed.

One out of three of every one of the marines and sailors, the corpsmen and doctors and chaplains and so on that go with us, one out of every three of them fell wounded or killed; 18 of 27 battalion commanders died there. And so the lesson that we learned there was that technology helps. There is no question but that the continuing bombing and the continuing fire support had to have done some damage. It did. And there is no question that there were some emplacements and guns that were taken out.

But it still took people to go ashore, to be the ultimate decider in the campaign that lasted for, again, 30 days, and which cost us about 6,700 Americans killed or wounded.

That took three Marine divisions, and, as I mentioned, we had six out there at the time. As those divisions then were being withdrawn from Iwo Jima, and even in fact before the island was declared secure, we landed with the remaining three Marine divisions and four Army divisions of the 10th United States Corps at Okinawa. This was to be the final battle of World War II because, as we all had just known and celebrated, the victory in Europe was declared during that period while that battle went on.

In Okinawa, once again, we came to learn that not only had surface fire supports and bombing and that sort of thing helped, but it was not the final arbiter. But in Okinawa we learned yet another lesson that is applicable today. We heard for the first time about Kamikazes—kami, the sons of the divine wind. In the period of the first 20 days of Okinawa we lost to Kamikaze attacks some 36 ships and 5,000 sailors at sea. That was the greatest number of losses that the U.S. Navy has incurred at any time in its history in terms either of ships in a single engagement or of sailors aboard those ships, in addition to the about 40,000 Americans that were wounded and killed ashore.

So again, there, we learned something that deserves to be addressed for the future—the Kamikaze.

Now, if you look, having taken that as a framework—that is not an analysis in detail of a single battle, but, if you will, that becomes the Pacific campaign and the strategies, the tactics, and the capabilities that we used during that campaign. If you adapt that to today, how would we do it today? Because you asked me that in the letter.

The first thing that we learned, again, is that—and I know this comes across as an "of course, that is a nice thing to say" thing. But it is this. That people first and foremost are what win wars or win battles for you. You can influence the outcome of a battle with technology, but you will never—we have never as a nation won a war with technology alone. We have influenced it. And indeed, it would cost us many more young men and women today if we did not have advanced technology.

So, as we look to the future and as we put a focus on what is ultimately important to the U.S. Marine Corps in particular and, I would suggest, across our armed services, it is that we must maintain a trained and a well-tempered, if you will, structure of people. It is easy to say we can get rid of people and we will spend our money on technology; and if we ever have another war, infantry is cheap; we will just raise a lot of infantry.

When you do that, you do not have leadership developed. You do not train a sergeant simply by making him a sergeant. You train a sergeant by letting him or her come up the ranks, advance, learn the skills. And believe me, there is skill in being an infantryman. When you are a young leader, be you a corporal, a sergeant, a lieutenant, whatever grade you might be, and you are sitting there in the rain and you are wet, and your map is wet and blurred and your ammunition is low and you are tired and you have not eaten in a few hours, and you are trying to make a fundamental decision, if it only affects four people around you or if it affects a squad of a dozen, or if it affects a platoon of 30 or 40, when you are the person responsible for making that decision and somebody is looking at you through the sights of a rifle or machine gun at fairly close range trying to kill you, believe me, you have got to have someone who is trained and confident and well brought up and knows how to make that decision.

So, whatever element of warfare we would apply it to, people are very fundamentally important to the essence of success in battle.

The second thing is that we have got to have—and again, I will speak as an amphibian; I will speak as a marine here today. But we have got to have the ability to reach objective areas, no matter how non-hostile they may be at the time. But we have got to be able to get there under a security that protects us from the Kamikazes of today and tomorrow. Kamikazes today are called theater ballistic missiles. That is fundamentally critical to our ability to do amphibious operations in the future or, I would suggest to you, air-landed operations or any type of operation.

So the ability to have systems like, at the present time, the Navy seeks to develop in the DDG–51s and the Aegis capabilities that we will put out that give us an ability to put an umbrella over any landing force that is being sent somewhere to do something, that is a very critical element of our future success in seaborne operations. We have got to have the maneuverable platform, sea bases if you want to call them that, that take us around and that give us the flexibility and the ability to be able to maneuver from the sea.

We have reached a point in our doctrinal concepts and in our doctrinal thinking and plans for the future whereby we do not ever want to go up against another Tarawa or up against another Iwo Jima where, again, we dump people ashore and then say, "Pick it up and fight your way in." That is the wrong way to go because that would cost us an enormous number of lives again. We have got to have better means of being flexible, versatile, and being able to maneuver on this battlefield in which water is not an obstacle, water is not simply a means of conveying you from point A to point B; i.e., from ship to shore, but rather, water is an avenue of approach that we can use in a great scheme of maneuver that will keep us from having to go up against such frontal defenses.

So we need good amphibious ships to be able to do that. The ships that we used at Tarawa, the ships that we used at Iwo Jima and elsewhere were good. They floated, they got you there, they brought people, they brought materiel. You went over the side and you crawled down cargo nets and you got in a bobbing wooden boat and you went ashore in it. We have to have better capability than that, and the ships of today provide that capability with their multi-purpose functioning well decks, with helicopter decks, with the ability to launch V-stall aircraft off of amphibious ships at sea. This is a dramatically forward capability. So we need to have that.

We need then the elements that will project a landing force somewhere to do something either in a hostile environment or in a fairly stable environment. The doctrine by which we will do that, a little bit of which we do today but with which we will look forward in the future to making a dramatic step forward, is called—I have referred to it earlier as—operational maneuver from the sea. The key element in the operational maneuver from the sea is this: It does not seek to move from ship to shore for the projection of power, but rather it seeks to move from ship to objective. There is a very significant difference there.

When you can move from 50 miles at sea to an objective that is 75 or 100 miles inshore with a very powerful force, and you can do that very rapidly and then sustain it with a craft like, again, the V–22 Osprey, that gives you a quantum leap. That means you do not have to run up against the defenses that were so costly to us in World War II.

So we need the ability then to maneuver flexibly, expansively, broadly about an objective area to avoid the confrontations like we experienced in World War II—the platforms to get us there. We need, once again, going back to the very origins of where I began, if you think about Tarawa, we knew that we needed an armored assault amphibian vehicle to be able to get ashore at Tarawa. That same vehicle—not the same model; a later model but working essentially the same and providing the same capability—was the vehicle that we used just a couple of months ago to extricate the marines and the other UNISOM forces from Somalia.

Some things never change. Technology helps you adapt, but some things fundamentally never change. In warfare, essentially, you kill each other. No matter what the technology, no matter how many silver bullets, you still fundamentally get down to the point to where you meet and you engage and you kill each other. And it is not nice, but that is the fact of life.

So I think in the future that the direction, I know the vision, that the Marine Corps has—and it is not a Carl Mundy vision; it is a vision of the corporate leadership of the Corps and of the young thinkers in the Corps, the corporals and the sergeants and the lieutenants and the captains that will be the generals of tomorrow. Their vision is pretty much as I have ascribed it to you.

We are a force of utility. I think if you look across the spectrum of U.S. conflicts, whether it be during wartime or whether it be during the crises between war, that you gain a great deal of utility and flexibility from your amphibious forces, which are the sailors and marines that make those up. We will never be an exclusive force. We can never do it all alone. We need a credible warfighting army. We need a very credible, capable, high-tech, sophisticated air force to be able to give us the technology. But we have got to ensure that we procure those things and that we maintain all of the elements of the force in the right proportion to be able to deliver the flexible, wide-ranging capabilities that we will need for future conflicts.

I would like to leave here and say, as all of us would like to believe, that probably we fought the last big one and there probably will never be another big war. And fundamentally I think that may be true. But there will be other wars, and they will involve infantry and they will involve body bags, they will involve sending the young sons and daughters of America up against an armed enemy. We will not have the luxury of being able to mass over 1,200 ships off of Okinawa. We will not have the luxury of being able to have a landing force at Okinawa of 180,000 people that we put ashore. We are going to have to do it with very few. They are going to have to be smart and they are going to have to be well equipped, and we are going to have to give them the tools to enable them to accomplish these things.

So, Senator, that is kind of my overview, and again, I appreciate the opportunity to give it to you here. I look forward to your questions.

Senator COHEN. Thank you very much. I am still a little unclear in terms of what, if you had to fight the battle of Okinawa with today's weaponry compared to what you had then. You mentioned the people, but of course you had more people available at that time, so that the attrition rate did not prove as severe as it might today if you had the same kind of quantitative trade-offs.

But what I am asking is, given what you have today, is it a quantum leap, number one, in technology that would present a different outcome? And you have sort of indicated it will not be technology—it can influence it somewhat, but ultimately it comes down to people, training, leadership. What is different today, if you had to fight that same battle with today's assets that you have at your disposal?

Now, my understanding is, for example, that the assault vehicles that you had then—you talked about the wooden boats at that time—their speed I am told was, what, 2 knots?

General MUNDY. About 4 knots, probably. Three or 4.

Senator COHEN. What is the speed of today's assault——

General MUNDY. Well, it is a quantum leap, Senator. It is about 8 knots today. So we have doubled the speed of the assault. There has to be good news there.

But I get your point, and I think that the single advantage we would have today in terms of mobility; that is, the mobility on the battlefield be it maritime or sea-based, would be the advent of the helicopter that enables us now to do a little bit of the ship-to-objective rather than just ship-to-shore maneuver that I talked about earlier. But we have got to have a replacement. We have got to get a vehicle to do that from further distances, and we have got to be able to do it faster.

In terms of the armored vehicle, the assault amphibian vehicle that is being developed will travel—as a matter of fact, I wish Senator Robb were here because I think he was just up to take a look at this and he could maybe give you a hands-on definition. But it will travel at speeds of up to about 30 or 35 knots with the same armored capability, carrying an upgraded not only weapons capability but an upgraded group of infantrymen that can, number one, penetrate more widely and, number two, when it lands on shore, will be able to keep up—if we use the main battle tank of today as a unit of measure, this particular vehicle will be able to maneuver on the battlefield coming straight out of the water at the same speed that the M–1 Abrams tank does today.

So that is a capability; that is our top requirement, and that is where we want to go in the future because it will save lives, it will go for the objective instead of go for attrition, and it will give us much greater success.

Senator COHEN. What about suppressive fire?

General MUNDY. Suppressive fires today—as you know, a lot of the naval surface fire support, naval gun fire as we would have called it in an earlier era, that has diminished in the numbers. The battleship is gone. The heavy cruisers are gone. Those types of heavy fire power. We have come to rely more today on tactical aircraft and on, again, systems that would give us a more rapidly delivery of fire from a rapid-fire single gun, or dual gun in some cases, aboard ships.

But if we had to undertake that engagement today we would be deficient in surface fire support. We would try and offset it through tactical aviation that gives us, with smarter weapons and whatnot, a little bit more capability.

Senator COHEN. There is a debate taking place regarding suppressive versus targeting, I guess you would call it precision targeting. Where do you come out on that? It seems to me, if you are talking about precision targeting, you have to have better information as to where the enemy is. And, you have to have the kind of munitions that can impact hard targets, and I am not sure that we have seen any evidence that we have those proposals underway.

General MUNDY. Well, you certainly need some of both. You need the ability for an identifiable target, one that we can see, and we need to have the systems to be able to see all that we can. I am not one who believes that we will ever see a complete grid of a battlefield and know everybody that is out there or everything that is out there. We can see some of the major weapon systems, and those become then the very appealing targets for precision-guided munitions that we can go in and take them out with.

At the same time, there is a need for the ability fundamentally to kick up dust and dirt and to throw fragments around the battlefield that keep the other fellow down, keep him disoriented. There is nothing more disconcerting than trying to do something and even having as small a weapon system as a mortar shooting at you, because you find yourself wishing that somehow or other your hole could get a little bit deeper than it is at the time that you are in it.

So we need the ability to have some general purpose types of weapons. We also need the precision-guided. And those, again, today, Senator, are about the only system beyond the operational level systems that could be in the form of a cruise missile or something like that, about the only systems that we have are air to ground.

Senator COHEN. Have you given any serious consideration to the MLRS, being able to put that aboard a ship?

General MUNDY. Absolutely.

Senator COHEN. Because I understand that the Army is now at least experimenting with being able to stabilize that.

General MUNDY. Absolutely. That has been for—well, for the past several years, we have looked at an afloat MLRS type system. The Navy has put some money into trying to explore that along with the Army. Yes, we think the system will stabilize itself aboard ship. It is a matter of putting it in it and doing some tests in the appropriate type of hull.

That gives you a capability for fairly accurate fire support and certainly destructive, you know, a massive explosion, when you fire with precision from a pretty good distance at sea. So that gets back to the demise of the battleship or of those types of fire supports—very rapid delivery and a pretty good accuracy in the delivery.

Senator COHEN. You mentioned the amphibious assault vehicle that you and Senator Robb looked at recently. What is the IOC on that?

General MUNDY. It is in research and development right now. We have a milestone one decision on it. We will be about 2005, 2006 in seeing that vehicle come.

Senator COHEN. And the V–22 is when?

General MUNDY. V–22 is 2001 for the IOC. Yes, sir.

Senator COHEN. And the full operational capability of the V–22 is——?

General MUNDY. 2001. In the 1996 budget we begin the long-lead procurement and then we will actually begin production in 1997 of the deliverable aircraft. They come on fairly slow. We build, which is at a low rate of initial production, about four, up to six, eight, nine and so on into the turn of the century. It would be highly desirable I think as we look toward our priorities for the future to get the production capacity up as high as we can. Otherwise, if we replace the entire medium-lift fleet that we have today, it will take us about 18 years to do that after we realize IOC at the current rate of acquisition. We need to speed that up.

Senator COHEN. Thank you. Senator Kennedy.

Senator KENNEDY. Thank you very much, gentlemen. I am enormously interested. Where did Saipan come in that list?

General MUNDY. Saipan and Guam were really very close together; Saipan and then, a few weeks later, into Guam. So that was freeing up that grouping of islands. That was also another landing that was undertaken. Second Marine Division landed there and fought at Saipan.

Senator KENNEDY. Just to follow up, I am trying to follow through on your excellent and fascinating history of the Marines in the Pacific in World War II and drawing the lessons and listening to the comparisons. You mentioned in terms of Iwo Jima and Tarawa the prolonged air assaults and heavy bombardment, and then the movement of the amphibious assaults and the necessity in terms of the support.

Which raises, as I think the chairman pointed out, that you have the amphibious assault, two amphibious assault systems; you have the V–22. And there is also the question about what is replacing the bombing and the battleships. And that is one of the issues that is a part of this whole sort of triad in terms of, as I understand, over-the-sea requirements.

And the COEA made the report, at least as a part of that whole process, in terms of the fire power. And we asked the Navy a little over a week ago about the report, and I was just interested. If we cannot provide the fire support for the landing zones deeper inshore, you know, we have to look at where we are in terms of, I imagine, the V–22 and obviously the amphibious assault. All of these really go together.

So I just am interested in really where we are in terms of that type of fire power. I think you have mentioned there will be a combination of different offshore fire power. I imagine it will be from some of the tactical air. There will be other types of systems that will come into place. Do you want to elaborate just a little bit about the offshore fire power, and also about where you see the COEA report fitting into that with their recommendations, and what parts of it you agree and what parts you differ and the reasons for it?

General MUNDY. Well, first, Senator, I think for those who—and there are many amongst us—who would look back to the "good old days" when we had the luxury of having a lot of ships and a lot of fire support systems, we would view that with some level of confidence. We do not have those anymore, and we do not have them in the volume that we would personally prefer to see them. So you always, I think, look for work-arounds in that case, and one of the work-arounds is to attempt to exploit, as I have mentioned, tactical aviation. And, in the case of the Marines, we have always focused our tactical air as a support of maneuvering ground formations as opposed to trying to do something else with it.

So we look at weapon systems; for example, the AV–8 aircraft which we can operate off of amphibious ships as well as off of fleet carriers if the carriers are needed somewhere else. We do not have enough of those. We would never have enough capacity to be able, I think, to take a large number of those or otherwise you remove your helicopters and then you do not have the mobility capability.

So there are simply off-sets in terms of the qualitative munitions, the more precision types of munitions that Senator Cohen was alluding to here. The exploration and the MLRS that we talked about offers a very exciting prospect for the future in terms of having a lot of fire support that can shoot not just nearer to the beach, but indeed, with something like a 50 or 60-mile range you can range well inland from a base at sea, which is very desirable.

In terms of the Navy COEA, I will have to defer there, Senator, in terms of any qualitative assessment for you at this time on that. I would be glad to take that for the record and get back.

[The information was not received at time of printing.]

Senator KENNEDY. Yes. Would you? Because it appears that there are important initiatives by the committee in terms of trying to get information along those lines. They have made recommendations. We want to try and find out, looking at it, the recommendations that were made and the reasons for finding an alternative and not embracing them, whether those are just financial. And, if so, what could possibly be the trade-offs. Or whether they feel that the real operational accomplishments of those recommendations can be achieved in another way. Because I think it is related to the whole question about the building of the construct of the fire power and the assault systems, the amphibious assault as well as the V–22.

Let me ask you just about the pace of the AAAV. The Navy is going to have to provide funds for you to acquire the AAAV, and I understand the Navy tried to accelerate it during the budget process. DOD did not agree with the acceleration. Do you know why the DOD did not agree to accelerate?

General MUNDY. Well, at the time, Senator, number one, we were looking at further budget reductions and the AAAV did take at least a percentage cut, if you will, which kicked it out about 2 years in development. That was about, as I recall, I think about $190 million that was cut out of the research and development funding in the program. That implicitly stretched it out. But that was at the DOD level, and again, it was felt to be necessary in terms of trying to find the resources to fund the rest of the requirements.

The Navy, in terms of the Navy funding, that really of course is in this mixed bag of Navy and Marine Corps in one pot. But the research and development funds were put in there by the Marine Corps. The Navy was not non-supportive in that sense; it is a research and development program. There had not been a milestone decision—in other words, defense acquisition board—at that time. There has been subsequent to that time.

But again, we are faced with a budget which is a couple of hundred million dollars short of being able to do it in the timeframe of 2 years; 2 years less in terms of R&D that we were during budget development time.

Senator KENNEDY. Is there any indication DOD would let the Navy and Marines accelerate the AAAV past this year? Has that decision been——

General MUNDY. Senator, that is just fundamentally a funding decision. In other words, it is a question of having the resources to be able to do it.

Senator KENNEDY. It is purely a funding decision, then.

General MUNDY. Yes, Senator, it is.

Senator KENNEDY. In terms of its ability to demonstrate results, if they are able to put the funds in, they will be able to accelerate the program.

General MUNDY. The Defense Acquisition Board has convened, has endorsed the program. We are at a milestone and additional funding would expedite the development of the program.

Senator KENNEDY. Could I ask just one question on the V–22 because it relates to the whole modern approach. As I understand, the budget provides for the V–22 for the Marine Corps and special operations beginning fiscal year 1997, and this plan does not appear to replace the CH–46 fleet in any reasonable, timely fashion. Do you believe the Navy can still afford the V–22 at the higher cost we are seeing in the budget? And how soon does the stretched-out V–22 delivery rate to the Marine Corps provide for replacement of the medium-lift fleet?

General MUNDY. First of all, your facts are certainly right on. 1997 is seen as the beginning of production, both of the initial aircraft for the special operations forces as well as for the Marine Corps. There are about 40 or 39 aircraft that are in the overall program; 33 of those will come to the Marine Corps and the remainder are the first craft that will go to the Special Operations Command.

The aircraft is being built about as fast as it can be. In other words, the testing and evaluation is ongoing; the craft are flying. We have more than 1,000 hours flying time on the aircraft. They are down at Patuxent River, operating very well and meeting or exceeding—in fact, I would almost say across the board exceeding—all of the requirements that have been imposed on the aircraft.

As far as the production rate, as I mentioned here, if we go into production in 1997, we see the initial operating capability in 2001. That will be the training squadron for the Marine Corps that we stand up to begin to train pilots. And then about a year later we will see the first of the operational squadrons in the fleet. So you have an operational capability but you actually have operating units about a year apart—make that 2002 as we look to the future—at the rate that we envision procuring the craft, because it is right now essentially capped or at least funded at about $1 billion a year. There will be a learning curve and more aircraft will come along as we go along. But the initial cost of the aircraft, like any other, will be enormously high.

Our concern is that we do not find ourselves in the situation where the rate of production is so low that, ergo, the cost of the aircraft becomes so high that it becomes perceived as a non-affordable craft. If you can get the rate of production up higher, then the cost becomes a little bit more tolerable.

Senator COHEN. Thank you, Senator Kennedy.

Regrettably, General Mundy, the order of arrival has completely reversed here. We had the Navy arrive ahead of the Marine Corps; Senator Smith arrived 5 minutes earlier than Senator Warner. I am not sure what that would do to the Okinawa invasion, but, Senator Smith, would you care to proceed?

Senator SMITH. Senator Warner was the Secretary of the Navy anyway.

General MUNDY. And the Marine Corps.

Senator SMITH. Thank you, Mr. Chairman. I will use a point of senatorial privilege here to embarrass General Mundy briefly.

General, you are going to retire next month after 38 years in the U.S. Marine Corps, and since this will be the last time that you are going to be before this committee, I want to take this opportunity to congratulate you on a job well done and a very distinguished career. You are a man of great integrity and character, and, speaking for myself and people that I represent in New Hampshire and, I am sure, all across America, we just say thank you for a job well done.

You have a lot to be proud of. The Marine Corps has performed superbly all over the world during your watch, certainly from Somalia to Haiti and Southwest Asia. And they have been busy and outstanding, as usual, and I think that is tribute to your leadership.

I think especially you can take pride in the advances we have made in resolving the Marine Corps medium-lift dilemma. After nearly a decade of difficulty we are now on a path to develop and field the V–22, the Osprey, certainly a revolutionary and much-needed asset. The decision by Congress last year to fund the first ship in the MPF enhancement program was another success, and hopefully there will be more.

The Marine Corps pioneered maritime pre-positioning, and the decision to fund the first of three ships represented a concrete endorsement of your program, something that I know you fought very hard for.

You have also laid the ground work to develop the next generation AAA vehicle which Senator Kennedy just questioned you on. One need only look at General Zinny's experience in the Somalia extraction to see that our current generation of amphibious vehicles are in need of replacement. And I will assure you that the committee will not hold you responsible for General Zinny's unfortunate experience.

Let me just go to one——

Senator COHEN. Senator Smith, I regret to inform you that your time has now expired. [Laughter.]

Senator SMITH. Just give me the same amount of time that you gave Senator Kennedy.

General, let me ask you about end-strengths. The 174,000 men roughly I think is about right; is that right? End-strength Marine Corps.

General MUNDY. Yes, sir.

Senator SMITH. Some proposals have talked about going as low as 159,000. Comment on that. Where do we need to be now and in the future, immediate future?

General MUNDY. Well, I will, sir. And let me thank you for your also kind remarks toward me. I appreciate them. And again, your support for the Marine Corps has been very strong and all of us know that, and we are deeply appreciative.

End-strength—I have talked about people here earlier, and I have talked about them I guess in individual terms. But end-strength for the Marine Corps is capability. What we are asked to do around the world on not only a day-to-day basis but to train for war and to fight wars when they occur is fundamentally dependent upon people. We cannot, as I think has been pretty well developed during the Bottom-Up Review, which in terms of its fore-structure determination for the Marine Corps is right on the market—I must admit that the Marine Corps had worked very hard to try and explain to people what the requirement for people is.

That has taken a great amount of education to relay the fact that we cannot execute the national strategy of this country with any fewer number of marines. The Marine Corps cannot answer the plans which it is tasked to do on a day-to-day basis; we cannot maintain the ramparts in the Western Pacific, which is determined under the current strategy to be of fairly critical significance to this Nation's future, with fewer marines. It is that simple. You can only stretch your people so far.

As I believe many here know, we operate the Marine Corps; and that is that we do not necessarily base the Marine Corps out there but we operate the Marine Corps from here and serve the needs out there by keeping the dependents, the families, the major bases, these 15 cities and towns that we call Marine bases that are in the United States, those are full of our families and our schools and our kids and our commissaries and things like that that are the sustaining base. But the marines operate out there. You have to have an adequate rotation base to be able to do that, and 174,000 is about the minimum to do the day-to-day business.

From a warfighting perspective, in order to provide a full-up, fully capable—going back to World War II lessons—Marine Corps to provide the three divisions and aircraft wings that this body was stipulated the Marine Corps shall be, in order to do that today will take the entire active structure and the reserve structure of the Marine Corps to be able to provide that warfighting capability. We do not have that full capability in the active structure, nor indeed, would I argue, do we really need it all there.

But that is the fundamental answer, Senator. If we change the size of the Marine Corps we have to change the national strategy, because the Marine Corps cannot execute it with fewer marines.

Senator SMITH. The 174,000 is the bottom.

General MUNDY. The 174,000, yes, is the absolute bottom by my formulation.

Senator SMITH. I do not want to repeat some of the questions that were asked by Senator Kennedy, but in the area of the MPF and V–22 and the AAAV, I would assume that you would characterize those three programs as critical to the future. If I were to say that, would I be correct in saying that you felt that all three of those programs are absolutely critical to the Marine Corps?

General MUNDY. Well, I do; yes, sir. I think—not to elaborate too long, but you had touched earlier on the maritime pre-positioning force and I think that does merit particular attention.

We have had, for the past 12 years or so, the ability positioned at sea of 52,000 marines and some 400 tactical aircraft to be delivered really with a modicum of strategic airlift. That was a pioneering effort to pre-position afloat. Fortunately, and as supportively as anything I can see that we are doing in terms of enhancing our strategic mobility within the Department of Defense, we are positioning more forces afloat.

The Army heavy brigade that will be positioned to float is a dramatic strategic mobility enhancement. It is another brigade of heavy armor which, if we need a heavy armor brigade, we will have out there instead of back here in Fort Stewart somewhere or in another base in CONUS that we have to pick up and move all the way to a distant battlefield. So it is a superb initiative. It gives us another 10,000 soldiers and 120 tanks to augment the 52,000 marines and about the same equivalent number of tanks, together with the tactical aircraft and all of the sustainability and whatnot that is in those afloat pre-positioned ships to be able to get to where we need them to go in a much shorter time.

So I think, if anything, what you have seen within the defense focus for the future is more, not less, afloat pre-positioning; and for that reason, the enhancement of the maritime pre-positioning force is only consistent with the Department of Defense strategy and will expand our capability in the future.

Senator SMITH. Just a final point. Two additional ships, MPR(E), you need them?

General MUNDY. Oh, at least two, Senator. Sure.

Senator SMITH. Thank you.

Senator COHEN. Thank you, Senator Smith. In extending Senator Smith's time, we allowed Senator Nunn to come in. Would you like to question at this point?

Senator NUNN. I do not have questions at this point. I may later. I do want to say this may be General Mundy's last hearing before this committee and I just wanted to say that he has done a superb job. I remember, it does not seem like 4 years ago, when Senator Heflin and I were quarreling about which one of us had the legitimate claim to General Mundy being a native son. He, I believe, took some credit because you went to Auburn, which seems to me rather tenuous since it is right across the river and mostly in Georgia.

But General Mundy has provided a solid foundation in terms of the quality and the size and the morale and readiness of the Marine Corps. I know that General Krulak is going to appreciate more and more your leadership as he takes over, and I want to wish you and Linda the very best in whatever you do. As a young, vigorous, energetic man, you have several more careers left in the service of the Nation in one capacity or the other, and the only question I have is: Is Terry Paul still going to have his hand out every day wanting money for the Marine Corps after you leave?

General MUNDY. Sir, I am certain that my successor will come in and solve those problems that I failed at instantly and that we will have more money than we could possibly spend. But we are going to leave Terry Paul over there anyway just in case. Thank you, Senator.

Senator NUNN. Okay, good. Thank you.

Senator COHEN. The Chair is also wondering whether that was a Shermanesque statement on the part of the Senator from Georgia in terms of how many careers ahead he has.

Senator NUNN. I do not know. I am a little younger than General Mundy. I may have a few more.

General MUNDY. No, sir. The Senator and I used to, when I would ride in, as I have mentioned before, into the Varsity Drive-In after Auburn had soundly beaten Georgia Tech in a football game and would yell, "War Eagle," I know that it was him that would run into the parking lot and throw beer bottles at my receding car as I left. [Laughter.]

So we are about of the same vintage, Senator, I think.

Senator NUNN. It was not me, but if I had been there I would have done it. [Laughter.]

Senator COHEN. Actually, he would have used spray paint. Senator Warner.

Senator WARNER. Thank you, Mr. Chairman. I join my colleagues in saying, as we say in the Navy Department, well done. It is a 4–0 performance. I have been privileged to know, or at least meet, the early commandants and knew the last eight of them very well. The first one was old A.A. Vandergriff, and I was in a room one time in the back when he walked in, and the man had great presence. And you have great presence, and you have used it in a very modest but professional way.

And to the other accolades paid you, I think you have put a special emphasis on the Marine family, the dependents, as you are fully aware of the stress on them occasioned by these deployments overseas and what appears to be the extended deployments that some marines have had to take here of recent. A "well done" to you and to Mrs. Mundy.

To follow on Senator Kennedy's questions and others on the V–22, have you worked out an operational format? What will perform the escort for this aircraft?

General MUNDY. Well, Senator, at the speeds with which it can deliver forces, 200 to 250 knots, we will be able to do that with the Harrier, for example. In other words, with tactical jet aircraft. And I would envision in the future as we get more into tilt rotor technology that there will be follow-on types of aircraft that may be of the same type. It is not infeasible I think to think about——

Senator WARNER. Would the AV–8B have a role in this, too?

General MUNDY. It does. The Harrier, the AV–8B.

Senator WARNER. That would be the primary?

General MUNDY. Today it would be, because very likely they would come together as a package in the same amphibious ship.

Senator WARNER. As you know, this committee has pioneered the night vision equipment. Colonel Brownlee of the professional staff has made it a specialty. What about the current inventory in the Marine Corps and particularly for the AH–1 Cobras and the AV–8Bs?

General MUNDY. The Cobras at the present time are getting the night-targeting system, the night-fighting capabilities. The AV–8B, we are doing that through a combination of systems. One of them is that the new systems coming in will have it, or the new aircraft that were the latest of the aircraft, if you will, procured.

But in the remanufacture of the Harrier, which we have worked out a good, interesting arrangement on by using components of the aircraft, we get a new aircraft all fully upgraded in terms of night-targeting systems and those sorts of things for a cost of about two-thirds the cost of a brand new aircraft. Now, at the present time, we are only acquiring four of those, and so we are paying about 80 percent of a new aircraft. But if we can get up, ramp up, to the level that we would like to be at a dozen or 14 a year, we will be paying about two-thirds the cost of an aircraft with all of those new upgraded capabilities.

Senator WARNER. Turning to the Javelin, the Corps was originally scheduled to procure $39 million of Javelin anti-tank missiles. I understand you moved up your initial procurement by creating a dip in the out-years. Can you address that?

General MUNDY. No, sir, I am not sure I can.

Senator WARNER. Is it still a high priority weapon?

General MUNDY. Yes, sir. Certainly is. Anti-tank weapons—the Javelin, the SRAW, the short-range anti-tank weapon. We need to upgrade our systems. Let me, if I may, get back to you, Senator.

Senator WARNER. Why don't you tell me a little bit about the SRAW. That also is a companion system.

General MUNDY. SRAW gives us a close-in capability. Javelin will be a longer-range anti-tank capability. Crew serve, the SRAW, gives us an individual Marine capability to engage a tank at very close quarters. And, as we in recent years have experienced an increased employment of forces in what you and I would have known at one time as build-up areas or military urban terrain, nowadays in cities and villages and towns and whatnot you need the ability to engage at close range rather than in the Cold War visions of engaging across the plains of Europe somewhere at 1000 or 2000 meters. You have got to be able to do it maybe at 50 meters or 100 meters, and the SRAW brings that capability with it. So we are very excited about it and want to pursue the SRAW as a short-range weapon.

Senator WARNER. As you depart the Corps, what is the one problem that you leave behind that you consider was the most difficult and the one which you would like to have had more time and perhaps more resources to address?

General MUNDY. The fundamental modernizing of the Marine Corps, not only in the major weapon systems that we have talked about. We tend here, when we come and testify before you, to focus on programs, on major programs—the Harriers or V–22s or AAAVs—and those are important. But they, for the most part, will roll in after the turn of the century. They will be costs that we will have to engage in the future.

The thing that right now gives me the greatest concern for the immediate future—and I am talking the next 5 or 6 years—is the modernization, or the procurement of small things that modernize us, that do not even make the headlines. These are just the things that you buy on a day-to-day basis to keep soldiers and marines and people like that operating in the field. A more rapid introduction of SINGARS. We are spending virtually a third of our procurement money this year on command and control systems that are critical to our ability to work as part of an integrated force. That is good, and we have made that priority judgment in our own right.

But we need also to be buying some of the ammunition, to be buying such fundamental things as replacing furniture in barracks.

We have got to get to a level of quality of living for not just our families, we need to focus on them too, but for the young bachelor marines that live in a barracks, and we give them a single room and we give them some prison style furniture because it is cheap and inexpensive to buy but it wears out very quickly. We need to replace those sorts of things.

So I worry a little bit about being able to just, if you will, buy the day-to-day groceries to keep us going through the week as well as eventually being able to have the holiday meal that we get at Christmas or that we get at Thanksgiving. So day-to-day procurement funding for the Marine Corps is the thing that I would put my focus on in the future and that I think General Krulak will have to come in behind me and focus on.

Senator WARNER. Thank you, General. Thank you, Mr. Chairman.

Senator COHEN. Thank you, Senator Warner.

General Mundy, could you go back and talk about Okinawa once again and give us what the Marine Corps has developed in the way of intelligence capability? Because, obviously, as you talk about the V–22 and talk about the AAAV, that gives you great mobility and penetration but you have to have intelligence to know where the enemy is.

What has the Marine Corps, number one, been doing in the field of intelligence? What is under development? What other sources would you depend upon for that intelligence? And are you being fully integrated with the entire TIARA exercise? My understanding is that that is not quite the case, but maybe you can explain that. What kind of priority do you place on the UAVs, the maneuverable one-man vehicles? Can you say something about intelligence?

General MUNDY. Yes, sir. That is critical. I would offer one caution, not to this committee necessarily but to ourselves as we think about intelligence, and that is that we can quest for so much information that we get a volume of information that we cannot use. You can be overwhelmed by information this day and time.

We are a part—we derive intelligence from that network of systems that all of the Armed Forces, and indeed, some of the national systems, are involved in that deliver intelligence. And our intelligence road map is really to be able to receive and disseminate intelligence from the many systems that come in—again, national, overhead, human intelligence, the reports that you get, the many, many sources that can provide you. We need to be able to analyze it quickly; we need to be able to distribute it so that it can be useful. And it is through the Marine Corps intelligence analysis and collection and dissemination systems, that we are investing in, that we seek to do that. That is primarily the focus we have taken up until now.

In terms of the intelligence structure—that is, an intelligence specialty or an intelligence core in the Marine Corps—we have never had a very large one. We have relied principally on the other services to provide that type of capability. And in a joint environment, which we are increasingly a part of, all of the services, I think we get an adequate amount of battlefield intelligence through all of these systems. Our situation is to have the adequate numbers of people and technology to process it and to disseminate it.

So intelligence dissemination is kind of a weak area right now. But I think, again, with the thesis that there is no time that I can envision in the future when it is going to be only marines that are out there conducting operations, that there are systems that will support us and that we can use and that we are involved in in development and use.

Senator COHEN. Still put a high priority on the UAV?

General MUNDY. Oh, yes, sir. UAVs. As you know, we still fly the Pioneer. We have that. We have been operating UAVs since the early 1980s when we got into that business in Lebanon. But we need a more advanced capability, not too sophisticated because we could price ourselves out of business. We need a good, useful, tactical and operational level UAV.

Senator COHEN. Just a couple more questions. I want to come back to this issue of fire support because there is still some confusion in my mind and that, I suspect, of other committee members.

There was a discussion of the requirements of naval fire support, what those requirements have to satisfy. I think General Wilhelm told the committee that the threshold range for fire support needed to be equal to the current range of the Marine Corps' organic artillery, plus a stand-off range for the firing ship. And this apparently seems to differ from the requirement that COEA briefed us on last year. They said the enemy artillery fire against inland landing zones had to be at risk. There seems to be some distinction between what General Wilhelm said and what COEA briefed us on last year. Maybe you can——

General MUNDY. Senator, I need to get a little bit smarter on both sides of that and come back to you for the record, if I can do that.

Senator COHEN. And the second part of that would be, apparently, there seems to be some moving away on the part of the Navy from the development of the 155-millimeter gun mount and they are focusing more on the 5-inch gun at this particular point with a rocket-assisted projectile with precision guidance. And again, there is some controversy apparently in terms of the effectiveness of the 5-inch compared with the 155-millimeter. Could you comment on your views on that?

General MUNDY. Of course, for naval gun fire support, we who have grown up knowing, 16-inch is probably the extreme side. I am not sure you would need that. But the 8-inch or 6-inch gun fire, 155 caliber artillery or gun fire, that is a sufficient round to be able to get you the penetration, to get you the explosiveness that you probably need for that type of artillery or surface fire support.

So 5-inch, a little bit lighter caliber than I would personally prefer to see. But I need to come back and give you a more sophisticated answer than that.

Senator COHEN. Thank you.

Senator KENNEDY. Just a few questions. This is on the pre-positioning ships. Last year, we authorized enough money for two of the three ships required to implement the enhancement but only one ship was appropriated. Can you give us the status of the funds and has the Department of Navy established plans for funding the next two ships?

General MUNDY. It has not been established within the Department of the Navy; in other words, that is not in the budget at the present time. The first ship is to begin undergoing—I think in July we begin to modify that ship for introduction into the fleet. So that is underway. Those funds have been released and are obligated and are being used.

With regard to the other two, at the present time, as part of the joint warfighting assessments being done in the Joint Staff, as part of the JROC, Joint Requirements Oversight Council work, an assessment of the requirements for additional afloat pre-positioning is being done. And the additional maritime pre-positioning ships will be assessed as part of that overall joint assessment.

Senator KENNEDY. But you do not know whether there will actually be requests for that?

General MUNDY. No, sir; I do not at this time. The Marine Corps will certainly support that and will hope that they will be in.

Senator KENNEDY. Well, I think the case was made, certainly, and I think you have reiterated the broad strategic reasons for that which I think are supported by the committee, and so I would hope it will be successful.

Let me ask you, the committee led the fight to make the M–1 tanks that were in excess to active duty Army requirements available to the Marine Corps. Can you tell us how the transfer is going, how the process is proceeding? And has the Marine Corps provided sufficient operation and maintenance funding to operate and train these tanks?

General MUNDY. The first of the initial delivery of those tanks took place 2 weeks ago, Senator, and that was down at Anniston when, in fact, Maj. Gen. Carol Mutter, U.S. Marine Corps, went down and I think rode out on the first tank when it was delivered. So that is underway and is proceeding smoothly. And, if anything, with credits to the Army albeit with the persuasions of this body, the delivery of those tanks is at a faster rate than had been decreed or had been anticipated.

So I think we will get those very quickly. The first 50 that we receive will then be put into the afloat pre-positioning ships, and that will begin to bring the level of the numbers of tanks that was a fundamental issue here up to the levels that they were with M–60 tanks.

In terms of the O&M that is associated with modifying the tanks, operating the tanks and that sort of thing, that will be the subject, since the modification, the money is there and being spent. The O&M will be included in subsequent budgets to ensure that we modify them.

Senator KENNEDY. They are fully committed to having——

General MUNDY. The Army absolutely is delivering to us, and the Marine Corps of course will use O&M funds for that.

Senator KENNEDY. Just on the attack-air integration, how concerned are you about whether the Marine Corps squadrons are going to be asked to deploy too frequently over too long a time? I think at other times you have talked about how they are going to maintain the function in terms of meeting their responsibility in support of a Marine on the ground. But can you give the assurance to the subcommittee that the budget program will be of such a nature that there will be continued exchange and rotation?

General MUNDY. Well, Senator, I believe I can do that. I certainly can in the current budget that is before you. We have balanced naval aviation with the understanding that Marine Corps aviation is the green side of naval—not Navy, but naval aviation. Together, we put the blue and green together and we use it as a naval capability.

So the employment of Marine air from carriers is not extraordinary. There are two squadrons out there at the present time that are part of carrier air groups, and we have done that since the days of World War II that we talked about earlier.

Our concern would be twofold, and I think you have hit upon it, that we are at about the level of integration we can bear at an operating tempo. Both we and the Navy are about leveled off in the tempo of operations for our squadrons right now. So, in other words, we cannot speed that up anymore; we would have to cut back on carrier deployments because we would not be able to maintain that operating tempo.

From the standpoint of the availability of the TAC air to support marines, that too is a concern, but our agreement with the Navy is that if we had to pull the TAC air back because of warfighting then we would certainly, of course, call up the reserves at that point and we would have, I believe, sufficient air between us.

Senator KENNEDY. Okay. Thank you very much.

Senator COHEN. Senator Smith, you have a second round.

Senator SMITH. Just a couple of quick questions, Mr. Chairman.

General, I have heard you testify on a number of occasions over the years, and most recently, the last three or four times you have been here, about your concerns about the basics. You mentioned furniture a few minutes ago and the quarters of the soldiers and that sort of thing. Sometimes these things, because they are not very glamorous, do get overlooked.

What about an area that the committee tried to deal with a while ago of the basic readiness of infantry troops, soldier enhancement? Have we fallen down in that?

General MUNDY. The soldier and marine enhancement?

Senator SMITH. Yes. Is there more that needs to be done there, or are we doing enough? I guess the question is: In regard to what you were talking about with the basics, does this also apply to the battlefield areas or the soldiers, or are you just specifically referring to the——

General MUNDY. On, yes, sir, across the board. Again, I guess for wont of a better term I am talking about the housekeeping supplies, the grocery bills, that sort of thing. We focused our resources on current readiness, and that means repairing the equipment that we are using today. It means continuing the level of training. It means fully funding our people programs in every respect because, as I have said, that is where I think we are, at least from the Marine Corps standpoint, most critical; and being able then to do the other things that we can do like the backlog in our maintenance and repair of facilities or the real property, the acquisition of sufficient levels of ammunition that would meet wartime stockage levels and that would enable us to continue to shoot at the rate that we do to train people.

Those sorts of things—night vision devices. I offer you sleeping bags because nobody will believe that, but you know, a sleeping bag is something you tear up a lot. You give things like that to young men and women and send them into the field for 30 days and you come back and they have sustained damage. They just do. So you have to replace those sorts of things, too. And those are the types of things that we are not investing adequately in for the future to include other more sophisticated systems.

Senator SMITH. Then we are not following through on the soldier enhancement program to satisfaction.

General MUNDY. Well, arguably, the answer would have to be perhaps yes to that. The soldier enhancement program that you all have given us money every year has been, among other things, for the experimentation if you will and doing things that are better and buying more little things, if you will, that will make life better.

I think you have been very helpful in that regard. It is the reprovisioning, the re-equipping, the taking care of what we have that I would focus more on.

Senator SMITH. Let me ask you one final question, General, if you could just look ahead a little as you leave. One of the areas that I have tried to focus on in the Acquisition and Technology Subcommittee that I chair is the so-called revolution in military affairs to look way out in the out-years and try to be futuristic a little bit and see what we need.

Are there any specific technology areas that you believe we ought to focus on or invest in, in specific support of amphibious forces? Anything we are overlooking or is not funded enough or is not funded at all? Or anything that you are aware of that you can speak about in open session that would be something we ought to look at?

General MUNDY. I think the very capabilities that we have been talking about fit into the most fundamental framework of revolutionary and military affairs, and that is a vehicle like the V–22 Osprey that is going to revolutionize a lot of the way——

Senator SMITH. Beyond those.

General MUNDY. The AAAV. Again, RMA. But beyond that I am not——

Senator SMITH. You are not a prognosticator.

General MUNDY. I am not a prognosticator at this point. No, sir.

Senator SMITH. Thank you.

Senator COHEN. Senator Nunn.

Senator NUNN. Thank you, Mr. Chairman.

General Mundy, there was a column in the paper March 12 by David Evans, Washington Post, the title, “Clear and Present Diapers.” I do not know whether you saw that, but it relates to the amount of money going into taking care of a high proportion of married members. I know that you managed to achieve a little publicity a few months back on that subject and I would ask my question with care here.

General MUNDY. Be free, Senator, however you would like to ask it.

Senator NUNN. The thrust of the article is that we are getting to the point where we are going to have to make choices between adequate coverage of families—and I know you have done a great deal for the families of your troops, and all of us applaud that. But are we going to reach a point, as David Evans says, that we really, because of the budget squeeze, are choosing between the adequate care and the care we really want to give the families and the military readiness of our troops to be able to fight on the battlefield and survive? Are we getting to that point? Or is that even an appropriate type consideration?

General MUNDY. No. I think it is a very appropriate consideration, Senator.

Again, I smiled because the marriage issue was, of course, one that, as I said at the time, we did not handle very well and I wish we had handled it differently. But ironically, everything that we sought to achieve in terms of the counseling, the training, the advice, just thinking about this 19-year old person for a little while, we are doing. That is in the training syllabus with the complete support of the Department of Defense, so we have been successful in getting all of that done, less the recruiting of the very small, the 4 or 5 percent, that we were taking that are married that we are continuing to take. But the counseling is working.

I think, Senator, that we can border on that, to be very candid with you. We all, as we look at the young people, and the old people for that matter, that make up the Armed Forces today, all of those of us in positions of senior leadership have an affection that becomes overwhelming at times in looking at what they do. They ask so little and they give so much, they really do. And we never ask anything of them that they do not deliver in a shorter time or a quicker time.

Recruiters in the field work 16, 18 hours a day now. That is not extraordinary; that is not a single event. That is happening out there today. That is tough on families because those families are not sitting in the confines of a base somewhere; they are living out in a town and they are lonely and the cost of living is high out there and so on. And I could go on.

But I think as we seek to improve the quality of life, as we seek to pour resources into housing and into better quality-of-life, it does not take much math to figure out that yes, you can overdo it at that extent. And yet I would never want to be one to come on the line and to say we should not take the very best care of our people that we can. We have to do that or they will vote with their feet and they will leave us. And they will become a great loss.

The Marine Corps' philosophy, which was a statement of General Al Gray before me and I picked up on it and I hope that General Krulak will pick up behind me, is that the best quality-of-life that you can give to a person in the service today is to bring them home alive. And to bring them home alive, you have got to train them and you have got to equip them and you have got to provide them with the things to do what we fundamentally exist to do, which is not necessarily to be a welfare agency or a social reform agency of some sort but to be the outfit that you send off to fight people.

I do not sense that we are, at this point in time, over the edge of the cliff on that, but I think we have to watch it very carefully;

and we have to make sure that the initiatives that we would take to take care of our people and keep them around are not totally at the expense of training.

Senator NUNN. In other words, if you have to choose the top item in terms of quality-of-life, you believe the top priority in the Marine Corps has to be to have people adequately trained, prepared, equipped and armed to be able to fight and survive on the battlefield.

General MUNDY. I do.

Senator NUNN. That is the top quality-of-life concern of the U.S. Marine Corps.

General MUNDY. Exactly.

Senator NUNN. And the other quality-of-life concerns have to come behind that.

General MUNDY. In my judgment, Senator, yes.

Senator NUNN. Including even families?

General MUNDY. Including the family support. Because what we have found in recent years at least is that if we involve this tremendous resource that is the family itself out there, if we recognize that we have many of the spouses that are in the Marine Corps—it is not like it was when I came in, which was the thesis was, if the Marine Corps wanted you to have a wife they would issue you one. We have long passed that, and we have a tremendous resource that comes to bat and that helps the Marine Corps cope with many of the family support issues that we face in an organization we call the Key Volunteer Network, and it is working very well.

Senator NUNN. When you mentioned counseling, that you do your counseling in accordance with the Marine Corps policy, what is the essence of that counseling you give the marines?

General MUNDY. Well, what the DOD study that was done on the heels of the marriage policy proposal revealed is that we use the people, particularly the first-termers, in the Armed Forces in different ways. For a marine, if there is such a thing as an average marine or an average airman or an average sailor, and there is not. But on average, as we look at statistics, it will tell you that marines are deployed in a first-term enlistment, 4-year enlistment, are gone for about a year, about 12 or 13 months. In other services, it is significantly less than that. We marines are deployers; we use them at a high rate. We in the Navy probably come up at the highest rate.

In addition to that, it showed us something we already knew but had never really articulated, and that is that 49 percent of the enlisted force of the Marine Corps are first termers; in other words, 22 years old or younger, compared to 25 percent on average of the other services. So we have a much more youthful population in the Marine Corps by design. That is the type of organization that we are; those are the types of structures that we raise.

When you take that fact, that we are twice as youthful and that we are gone measurably four or five times as much of the time, we have to have the ability to sit a young person down and say, "Think about the fact that when you finish boot camp we are going to send you on to the infantry training school; we are then going to send you to your specialty school, and then we are going to deploy you. And if you choose to marry at this particular time we support that and we will do everything we can for you, but you need to have a situation in which, when we send you to Oceanside, California or some other high cost-of-living area and then send you away for 6 to 9 months of your first year that you are going to be there, you have got to have a structure and you have got to have an ability and you have got to have maturity to deal with that because the Marine Corps cannot do that for you."

Senator NUNN. In other words, you tell them what is coming.

General MUNDY. Yes, sir.

Senator NUNN. Thank you.

Senator COHEN. Thank you, Senator Nunn.

My understanding is that you have to depart at 2:30, General?

General MUNDY. At the discretion of the committee, Senator.

Senator COHEN. Before you do, we will yield to the Chairman, Senator Thurmond.

Chairman THURMOND. General Mundy, your procurement budget this year is only $474 million, about 6 percent of your overall budget. Is the amount of money in your overall budget adequate, or is your budget out of balance?

General MUNDY. Senator, my answer would be that I would give anything if we could apply more resources toward procurement. You have accurately pointed out that this is indeed one of the—this is the third year in a row that our procurement budget has been essentially one-third the amount that we ordinarily invest in the Marine Corps. So I wish that we had more money to invest. But we have chosen to invest those funds that we have in people that we have been talking about and to invest them in current readiness, which means repairing what we are using at a high rate today, continuing training, and doing those sorts of things that ensure that we can answer the bell today.

But it is low and I wish that it were larger.

Chairman THURMOND. General Mundy, too often we focus too heavily on the modernization of weapons and equipment when, in many cases, the doctrinal concepts really make the greater difference in winning battles. Would you describe some of the more important doctrinal concepts adopted by the Marine Corps since World War II that you believe are significant?

General MUNDY. Yes, sir, I certainly will, Senator. I remarked earlier on operational maneuver from the sea and on the concept within that doctrine, within that fundamental doctrine, of being able to conduct operations not just from ship to shore but, rather, from ship to objective wherever that objective may be. And I think that is probably the most dramatic change in operational concept that the Marine Corps has sought to expand, because I agree with you that all of our solutions do not necessarily lie in investment in a newer or a better or a bigger thing, but rather, they lie in the mind in new and innovative ways to use not only what we have but what may be lesser capable but, nonetheless, will be sufficient if we employ it right doctrinally and concept-wise.

Chairman THURMOND. General Mundy, marines spend a great deal of their time deployed aboard amphibious ships from which they may be called to go into combat on short notice. When marines are initially deployed aboard ships, they are all highly trained and ready for combat. However, their readiness for combat deteriorates during their deployment due to the limited opportunities for them to train and maintain their combat skills.

I believe that we should take greater advantage of the advances in simulation devices in order to increase the opportunities for training aboard ship to maintain combat proficiency. What do you think about this, and what initiatives have you taken in the Marine Corps to use electronic simulation to train marines aboard ships?

General MUNDY. First of all, I agree with you wholeheartedly, Senator, that not only do we achieve through the simulated systems, whether they be a squad trainer, an individual trainer, the various scenarios that are very, very realistic; you can get involved in these and actually become emotionally involved in them, they are that realistic, as you are attempting to engage an enemy in a tank or with a rifle or with a pistol or whatever the weapon system.

We now deploy those aboard ships. We take them out with those units that are going to be gone for a while so that you can actually, within the confines of the ships and the constraints of the space available, we can conduct that type of training.

But equally important to that is, you know, we use those fundamentally and such things as marksmanship training at the recruit depots. So, if you went down to Paris Island in the great State of South Carolina today you would find marines training, not shooting live ammunition which is very expensive to do until it comes time to qualify with their rifle, but you would find them instead inside a building down there shooting on training devices that give you all the realism and give you the fundamental marksmanship training that is much less expensive.

So it is economical, it is effective for the very reasons that you mentioned aboard ship, and it is realistic. You can shoot at a paper target and learn fundamental marksmanship. But when you have a scenario and the visual effects of people advancing toward you or moving through a tree line and all of the, if you will, virtual reality that you can gain from these type systems, it is a tremendous concept for the future and one that we are very interested in.

Chairman THURMOND. General Mundy, you spoke of Paris Island. I want to congratulate you and the Marine Corps on your support of Paris Island and the Beaufort Marine Corp Air Station. I think these are two of your finest installations and we are very proud of them in South Carolina.

General MUNDY. We are glad to be there, Senator.

Chairman THURMOND. Incidentally, is this your last appearance before you retire?

General MUNDY. Well, Senator Nunn came in earlier and said this might be my last appearance and I had an immediate chill go up my back because I said, “Oh, my gosh, they may not confirm me for retirement here.” So, unless you choose otherwise, I think this will be my last time here. Yes, sir.

Chairman THURMOND. Well, it may be, so I just want to make a statement.

I have been a Senator now for 40 years and I have been tremendously impressed with you as an officer and as a great American, and I want to commend you for your long, capable and dedicated service. If we had all personnel like you in service, it would be ideal. You have done a great job, we are proud of you, and I wish you well in all you undertake.

General MUNDY. Thank you, sir. It has been a privilege to serve.

Senator COHEN. Thank you, Senator Thurmond.

I might point out, General Mundy, that Senator Thurmond has now reversed his position. He says he now favors term limitations for members of the Senate, that he is only interested in serving two more terms. [Laughter.]

A couple of quick points and then we will release you and not hold you captive any longer. Senator Smith asked a couple of questions dealing with additional needs of the Marine Corps. Last year we provided additional funding for two more CH–53 helicopters. I assume that the Marine Corps could use more if additional funding were provided?

General MUNDY. Senator, the answer is yes with regard to CH–53s because of the quality of the aircraft itself. We are focused on the reserve right now. We do not have a match between the heavy lift squadrons in the reserve and in the active structure. The reserve is still flying predominantly the CH–53D aircraft which we count as a medium-lift aircraft. It is older and it is less capable and so on. The Echo, the E model, is a much more advanced aircraft.

So what we would do with any additional resources that came our way in that regard is to attempt to modernize our reserve squadrons and make them completely inter-operable with the active squadrons.

Senator COHEN. What about amphibious lift? Can you use additional ships for amphibious lift?

General MUNDY. As you know, that really gets into the Navy ship construction plan. As I look at it, we have a good plan in terms of the types of ships that are being delivered now and that are on the drawing board, the LPD–17 being the one that has been for a couple of years here. The LHDs, currently LHD–6 is under contract. We have long expressed an operational requirement for 12 amphibious-ready groups. It would take another LHD to complete that requirement in the long term, and that ship is out there in about 2001. So I am certainly hopeful that the ship construction plan will not wane or change at all because we will reach a point at which we will become critical in terms of amphibious ships unless we continue an aggressive shipbuilding plan.

Senator COHEN. One final point. Your medium truck remanufacturing program, can you tell us why the Marines have decided not to purchase new vehicles but to go into the remanufacture program?

General MUNDY. Marines probably think about things in the same vein. And just as I described the rebuild of the AV–8 Harrier for about somewhere between two-thirds and 80 percent of the cost depending on how many you buy, when we looked at the truck we found that there are basic pieces of the truck that you really do not need to throw out and rebuild. The bed of the truck or the basic structures of the truck can be used again, and so you can rebuild the truck at about that same cost, at about 75 percent or 80 percent.

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We have for our medium tactical vehicle fleet—this is the truck we are talking about, the 5-ton—we would rebuild that truck to where we would have an 8-ton capability on road and a 5-ton capability off-road, and that combined with our light and our heavy truck fleet meets the requirements for the Marine Corps.

So it is a make-sense, economy, new truck for the price, for 80 percent of the price, of a brand new or new vehicle. That is where we are on that.

Senator COHEN. What is the condition of your HUM–Vs?

General MUNDY. Well, the HUM–V of course is one of the newer vehicles to be entered into the fleet even though it, like many other things that we began to procure in the eighties, are now becoming 15, 20 years old. But the vehicle is operating fine. We will need to do some upgrades and modernization on it in the future.

Senator COHEN. Well, any other questions I have I will submit to you for the record and save you from coming back. But let me once again add my own high praise that you have earned and deserve. You certainly will exit the Marine Corps with the accolades of not only all of your colleagues but all of the people that you have testified before and appeared before on Capitol Hill. We commend you for a job well done.

General MUNDY. Thank you very much, Senator.

Senator COHEN. The subcommittee will stand adjourned.

[Whereupon, at 2:46 p.m., the subcommittee was adjourned.]

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